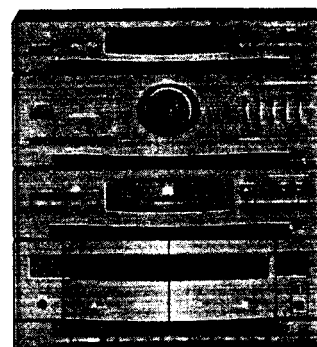


Midi System

AS440/20, /20P, /22, /22P, /25, /25P, /37

AS445/20, /21, /25, /30

Service  
Service  
Service



# Service Manual

COMPACT  
disc  
DIGITAL AUDIO

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Annex

**Service Manual** Record Player DL-40

**Service Manual** Tape Transport RDN-11

CLASS 1  
LASER PRODUCT

## Specification

### General:

Mains voltage	: 220V / 50Hz for /20, /22
	: 240V / 50Hz for /25
	: 120V or 230V /50Hz via voltage selector for /21, /30
	: 120V / 60Hz for /37
Power consumption	: $\leq 80$ W at maximum output power
	: $\leq 10$ W in stand by

### Amplifier:

Output power	: 2 x 10W at 6 $\Omega$ D=10%
Music power	: 2 x 33W at 6 $\Omega$
Headphone	: 6.3mm stereo jack 25mW at 32 $\Omega$ ( $\approx 0.9$ V at 32 $\Omega$ )
Power stage protection	: Temperature
Frequency response	: 63 Hz - 14 kHz (-3dB) Limit
	: 63 Hz - 17 kHz (-3dB) Typical value
Tone control	
DBB	: $\pm 6$ dB at 100 Hz
300 Hz	: $\pm 6$ dB at 300 Hz
1 kHz	: $\pm 6$ dB at 1 kHz
4 kHz	: $\pm 6$ dB at 4 kHz
10 kHz	: $\pm 6$ dB at 10kHz
Input sensitivity	
PHONO/LINE	: 350 mV

Tuner:		FM	MW	LW
Tuning range		87.5 - 108 MHz Grid 50 kHz	522 - 1611 kHz (Grid 9kHz) 530 - 1700 kHz (only for /37) (Grid 10kHz)	148 - 284 kHz (Grid 3kHz)
Aerial input		Coax 75 $\Omega$ F-Connector	Ferrite antenna	Ferrite antenna
IF		10.7 MHz $\pm 25$ kHz	450 kHz $\pm 1$ kHz	450 kHz $\pm 1$ kHz
Sensitivity	Mono : 26dB S/N	$\leq 4$ $\mu$ V (2 $\mu$ V typ.)	3 mV/m (1.5 mV/m typ.)	$\leq 6$ mV/m
	Stereo : 46dB S/N	$\leq 45$ $\mu$ V		
	Search tuning	7 $\mu$ V typ.	$\leq 6$ mV/m	$\leq 6$ mV/m
Distortion		$\leq 3\%$ (2% typ.) RF=1mV $\Delta f=75$ kHz	$\leq 5\%$ (3% typ.) RF=100mV/m m=80%	$\leq 5\%$ (3% typ.) RF=100mV/m m=80%
Channel separation		$\geq 26$ dB (30dB typ.)	-	-
Image rejection ratio		30 dB (40 dB typ.)	27 dB (30 dB typ.)	40 dB (43 dB typ.)
-3 dB limiting point		$\leq 5$ $\mu$ V (2 $\mu$ V typ.)		

### CD unit:

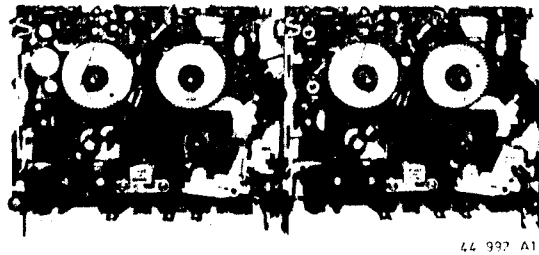
Have to be measured direct on internal connector 1300

Frequency response	: 20 - 20.000 Hz $\pm 2$ dB
Output level	: 2V $\pm 3$ dB
Signal/noise ratio	: $\geq 90$ dB
Distortion	: $\leq 1\%$ at 1 kHz
Channel difference	: $\leq 2$ dB at 1 kHz
Channel crosstalk	: 50 dB max.
De emphasis	: 0 or 15/50 $\mu$ s switched automatically by subcode on the disc

### Laser

Output power	: $\leq 500$ $\mu$ W
Wave length	: 780 $\pm 20$ nm

# Tape transport RDN11



For details and exploded view see Service Manual of tape transport RN/RR, RDN/RDR (general documentation)

## Service Manual

### GB MAINTENANCE

It is recommended to clean the recorder after approx. 500 hours of operation.

To be cleaned with alcohol or spirit

- Erase head
- Recording/playback head
- Capstan
- Pressure roller

### F ENTRETIEN

L'appareil devra être nettoyé après env. 500 heures de marche aux points les plus importants.

Nettoyer les éléments suivants à l'alcool ou à l'alcool à brûler:

- Tête effacement
- Tête enregistrement/reproduction
- Cabestan
- Galet presseur

### I MANUTENZIONE

E consigliabile pulire l'apparecchio dopo circa 500 ore di funzionamento ai punti principali.

Pulire con alcool

- Testina di cancellazione
- Testina di registrazione/riproduzione
- Capstan
- Rullo preminastro

### NL ONDERHOUD

Aanbevolen wordt het apparaat na ca. 500 bedrijfsuren schoon te maken

Schoonmaken met alcohol of spiritus:

- Wiskop
- Opneem-/weergeefkop
- Toonas
- Drukrol

### D WARTUNG

Es empfiehlt sich, das Gerät nach ca. 500 Betriebsstunden zu reinigen

Reinigen mit Alkohol oder Spiritus:

- Löschkopf
- Aufnahme/Wiedergabe-Kopf
- Tonachse
- Andruckrolle

### SPECIAL FEATURES

#### GB CONTINUOUS PLAY

**Definition:** "Play" starts on deck A (play back deck). After tape end on deck A, deck B (REC/PB - deck) will be going on with "Play" till tape end. Then both decks will be in "Stop" - mode due to full auto shut off.

Operating sequence:

- 1) start with "Play" on deck A
- 2) switch "Pause" on deck B
- 3) switch "Play" on deck B

After tape end on deck A auto stop - mechanism is working. The locked "play" - button on deck A and the "pause" - button on deck B will be released. "Play" - mode on deck B will now be active. After tape end on deck B full auto shut off will be activated.

#### SYNCHRO START

"COPY" from deck A to deck B

Operating sequence:

- 1) switch "Pause" on deck B
- 2) switch "REC" (one touch) on deck B
- 3) switch "Play" on deck A

In that moment when the "play" - button on deck A will be depressed the "pause" - button on deck B will be released. Now "REC" - mode on deck B will be active. Both decks will be working.

If one of the cassettes reaches tape end full auto shut off will be activated and COPY is finished.

#### NL ONONDERBROKEN WEERGEVEN

Omschrijving: Het weergeven begint op deck A (weergavedeck). Nadat op deck A het einde van de band is bereikt, gaat het weergeven door op deck B (opname/weergave-deck). Op dat moment worden beide decks geheel automatisch in de stand "Stop" geschakeld. Bedieningsvolgorde:

- 1) druk op toets "Play" op deck A
- 2) druk op toets "Pause" op deck B
- 3) druk op toets "Play" op deck B

Nadat het einde van de band op deck A is bereikt, treedt het autostop-mechanisme in werking. De vergrendelde toets "Play" op deck A en de toets "Pause" op deck B worden dan vrijgegeven. De stand "Play" op deck B is nu geactiveerd. Nadat het einde van de band op deck B is bereikt, wordt de volledig automatische uitschakeling geactiveerd.

#### SYNCHROON STARTEN

"KOPIEREN" van deck A naar deck B

Bedieningsvolgorde:

- 1) druk op toets "Pause" op deck B
- 2) druk (een keer) op toets "REC" op deck B
- 3) druk op toets "Play" op deck A

Op het moment dat de toets "Play" op deck A wordt ingedrukt, wordt de toets "Pause" op deck B vrijgegeven. De stand "REC" op deck B is nu geactiveerd. Beide decks zijn in werking.

Indien op een van de cassettes het einde van de band wordt bereikt, wordt de volledig automatische uitschakeling geactiveerd en het kopiëren beëindigd.

#### F LECTURE EN CONTINU

**Définition:** La lecture ("play") démarre sur la platine A (platine de lecture). A l'arrivée en fin de bande sur la platine A, la platine B (platine d'enregistrement/lecture) poursuivra la lecture ("play") jusqu'à la fin de la bande. Ensuite, les deux platines seront en mode arrêt ("stop") grâce à l'arrêt total automatique.

Ordre de fonctionnement :

- 1) mettez en marche avec "Play" sur la platine A
- 2) appuyez sur "Pause" sur la platine B
- 3) appuyez sur "Play" sur la platine B

Après l'arrivée en fin de bande sur la platine A, le mécanisme d'arrêt automatique entre en fonctionnement. Les touches verrouillées "play" sur la platine A et "pause" sur la platine B sont alors débloquentes. Le mode lecture ("play") sur la platine B est à présent actif. Après l'arrivée en fin de bande sur la platine B, l'arrêt total automatique sera activé. Lorsque la touche de "sélection de mode" est en position 2 (inversée), il est alors possible d'écouter trois faces de deux cassettes en continu.

#### DEPART SYNCHRONISE

Pour la COPIE de la platine A vers la platine B

Ordre de fonctionnement :

- 1) appuyez sur "Pause" sur la platine B
- 2) appuyez sur "REC" (enregistrement à une touche) sur la platine B
- 3) appuyez sur "Play" sur la platine A

Au moment où la touche "play" (lecture) sur la platine A sera enfoncée, la touche "pause" sur la platine B sera dégagée. Le mode "REC" (enregistrement) sur la platine B est à présent actif. Les deux platines fonctionnent. Si l'une des cassettes arrive en fin de bande, l'arrêt total automatique sera activé et la COPIE terminée.

#### D CONTINUOUS PLAY

**Definition:** "Play" beginnt auf Laufwerk A (Wiedergabe - Laufwerk). Am Bandende von Laufwerk A setzt Laufwerk B (Aufn./Wg - Laufwerk) mit "Play" fort und läuft bis Bandende. Danach sind beide Laufwerke abgeschaltet. Bedienungsablauf:

- 1) "Play" - Taste auf Laufwerk A drücken
- 2) "Pause" - Taste auf Laufwerk B drücken
- 3) "Play" - Taste auf Laufwerk B drücken

Am Bandende von Laufwerk A arbeitet der Auto stop - Mechanismus. Die "Play" - Taste von Laufwerk A und die "Pause" - Taste von Laufwerk B werden gelöst. Auf Laufwerk B ist nun die "Play" - Funktion eingeschaltet. Am Bandende von Laufwerk B schaltet die automatische Endabschaltung ab.

#### SYNCHRO START

"Kopieren" von Laufwerk A auf Laufwerk B.

Bedienungsablauf:

- 1) "Pause" - Taste von Laufwerk B drücken
- 2) "REC" - Taste (one touch) von Laufwerk B drücken
- 3) "Play" - Taste von Laufwerk A drücken

In dem Moment wo die "Play" - Taste von Laufwerk A gedrückt wird, wird die "Pause" - Taste von Laufwerk B gelöst. "Aufnahme" - Modus wird dadurch auf Laufwerk B aktiviert und beide Laufwerke arbeiten.

Erreicht eine der beiden Kassetten das Bandende, schaltet die automatische Endabschaltung ab und der Kopierbetrieb wird beendet.

#### I RIPRODUZIONE CONTINUA

Funzionamento: la riproduzione inizia con la cassetta nel riproduttore A. Alla fine del nastro della cassetta nel riproduttore A, la riproduzione viene continuata con la cassetta nel registratore/riproduttore B. In tale momento, ambedue gli apparecchi vengono commutati automaticamente nel modo di arresto.

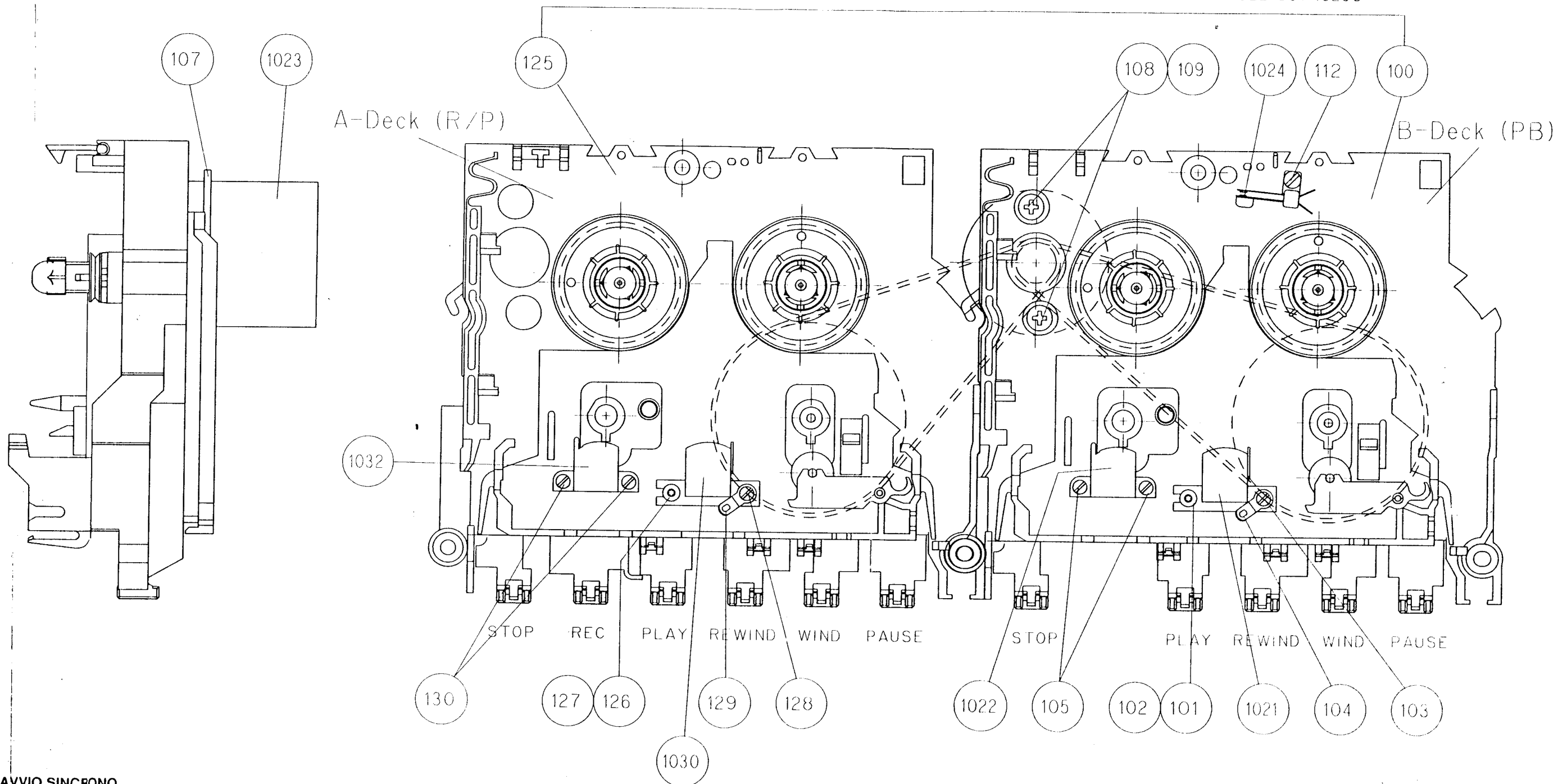
Ordine di comando:

- 1) premere il tasto "Play" sul riproduttore A
- 2) premere il tasto "Pause" sul registratore/riproduttore B
- 3) premere il tasto "Play" sul registratore/riproduttore B

Alla fine del nastro della cassetta nel riproduttore A, viene attivato il meccanismo di arresto automatico dello stesso. Viene rilasciato il tasto "Play" sul riproduttore A ed il tasto "Pause" sul registratore/riproduttore B. Viene avviata la riproduzione della cassetta nel registratore/riproduttore B. Quando è stata raggiunta la fine del nastro della cassetta nel registratore/riproduttore B, ambedue gli apparecchi vengono arrestati automaticamente.

Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne

STRIPPED VERS. WITHOUT NOTED ITEMS IS CALLED AND HANDLED AS **RN 0** 4822 691 10296



# AVVIO SINCRONO

COPIATURA della cassetta nel riproduttore A sulla cassetta nel registratore/riproduttore B.

Ordine di comando:

- 1) premere il tasto **"PAUSE"** sul registratore/riproduttore B.
- 2) premere (una volta) il tasto **"REC"** sul registratore/riproduttore B.
- 3) premere il tasto **"PLAY"** sul riproduttore A.

Premendo il tasto **"PLAY"** sul riproduttore A verrà rilasciato il tasto **"PAUSE"** sul registratore/riproduttore B e quest'ultimo predisposto per la registrazione. La cassetta nel riproduttore A viene copiata sulla cassetta nel registratore/riproduttore B. Quando viene raggiunta la fine del nastro di una delle cassette, ambedue gli apparecchi vengono arrestati automaticamente.

100	4822 691 10296	RN 0 assy
101	4322 492 51473	spring azimuth
107	4322 529 10254	damper,motor
108	4322 502 11866	screw,motor
125	4822 691 10296	RN 0 assy
126	4322 492 51473	spring,azimuth
1021	4822 249 10397	head,Rec/Pb
1022	4322 404 10685	head,dummy
1023	4322 361 21637	motor, MSI-5U2LWDR
1024	4322 271 30598	switch indication play
1030	4822 249 10397	head,Rec/Pb
1032	4822 249 20072	head,erase

## General parts

7/67	4822 520 10718	bearing plate
38	4822 520 40134	ball, bearing
40	4822 402 10037	lever, pinch roller right
41/76	4822 528 70646	pinch roller
43	4822 404 10853	slide, key lock
58	4822 358 30929	drive belt RN0 S (long)
98	4822 358 30928	drive belt RN0 D (short)
402	4822 528 20676	take-up clutch assy

( pos. numbr refer to exploded view in General Documentation 4822 725 23763 )

Only those parts of which a service code number is stated are service parts.



**Recorder part:**

Tape speed	: 4.76cm/s $\pm 2\%$ in <b>Normal Speed</b> : 8.5cm/s $\pm 12\%$ in <b>High Speed Dubbing</b>
Wow & Flutter	: $\leq 0.4\%$
Winding speed	: $\leq 130s$ for C60 cassette
Erase / Bias system	: AC 60kHz
RIF-shift	: service solution on request
Distortion at 200 nWb/m	: $\leq 5\%$
Channel difference at PB	: $\leq 3dB$
Channel difference overall	: $\leq 3dB$
Channel separation	: $\geq 18dB$ at 1kHz
Track separation	: $\geq 55dB$ at 1kHz

**Phono part:**

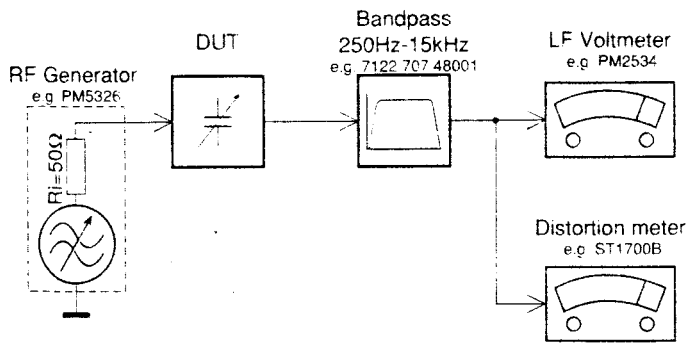
Power supply	: 12V DC / 80mA
Wow & Flutter	: 0.25% JIS : 0.35% DIN
Operating speed	: 33 $\frac{1}{3}$ and 45 rpm
Drive system	: Belt drive with automatic return

	IEC I	IEC I (dubbing)	IEC II	IEC II (dubbing)	Dubbing HS <sup>3)</sup>
Frequency response -8 dB <sup>1)</sup>	100Hz - 10kHz	125Hz - 8kHz	100Hz - 10kHz	125Hz - 8kHz	125Hz - 8kHz
Signal to Hiss ratio <sup>2)</sup> A-weighted	$\geq 45$ dB	$\geq 45$ dB	$\geq 45$ dB	$\geq 45$ dB	
Signal to Noise ratio <sup>2)</sup> FF-weighted	$\geq 40$ dB	$\geq 40$ dB	$\geq 40$ dB	$\geq 40$ dB	
Erase attenuation <sup>4)</sup>	$\geq 55$ dB	$\geq 55$ dB	$\geq 55$ dB	$\geq 55$ dB	

<sup>1)</sup> typical value<sup>2)</sup> at 250 nWb/m<sup>3)</sup> at -10dB<sup>4)</sup> Use a 1kHz passfilter to minimize the wide band noise component.**The set reacts on following RC5 commands:**

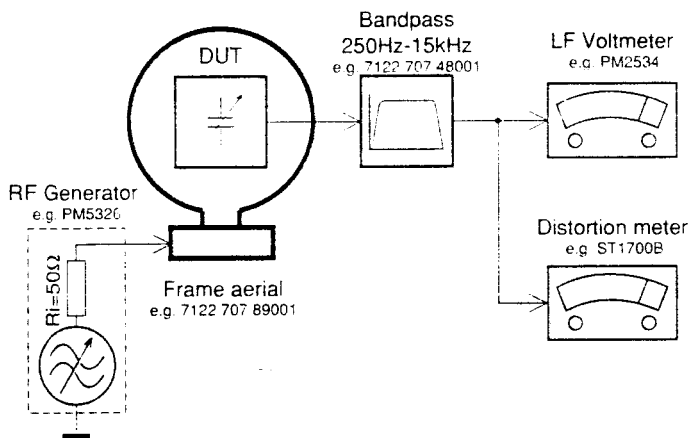
	Systemcode	Commandcode
Stand by	17,20,21	12
Tuner	17	63
Aux/Phono	21	63
CD	20	63
Volume up	16	16
Volume down	16	17
Repeat	20	29
Shuffle	20	28
Scan	20	43
Play (CD)	20	53
Pause (CD)	20	48
Next (CD)	20	32
Previous (CD)	20	33
Search Forward (CD)	20	52
Search Backward (CD)	20	50
Stop (CD)	20	54
Tuning up	17	30
Tuning down	17	31
Preset up	17	32
Preset down	17	33

### Tuner FM



Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pilotone (19kHz, 38kHz).

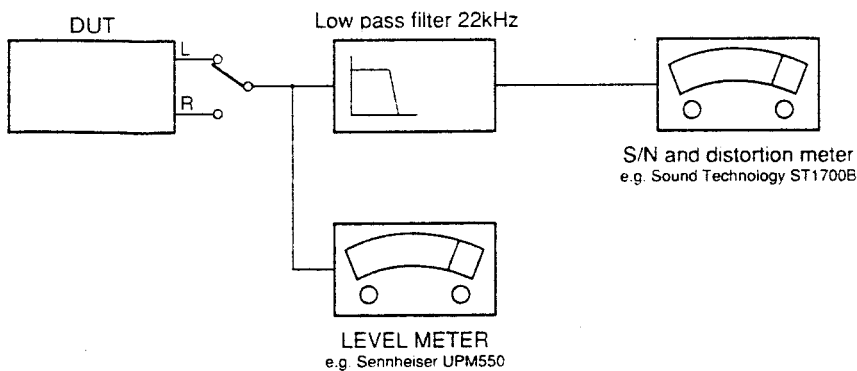
### Tuner AM (MW,LW)



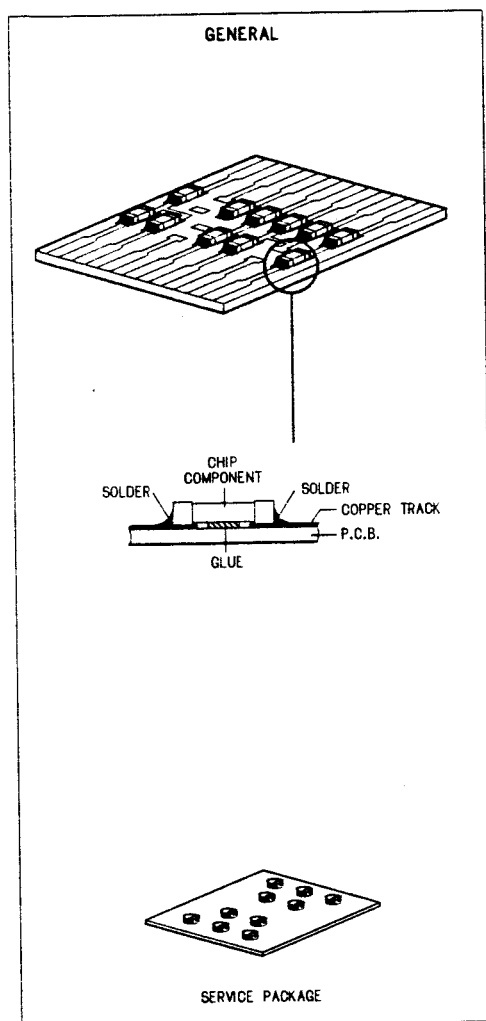
To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday's cage.  
Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

### CD

Use Audio Signal Disc SBC429 4822 397 30184 (replaces test disc 3)  
L.P.F. = 13<sup>th</sup> order filter 4822 395 30204



## HANDLING CHIP COMPONENTS

**(GB) WARNING**

All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools at this potential.

**(F) ATTENTION**

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation. Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enlever le bracelet sert d'une résistance de sécurité. Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

**(GB)**

Safety regulations require that the set be restored to its original condition and that parts which are identical to those specified be used.

**(D)**

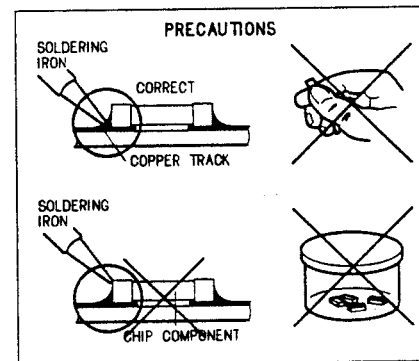
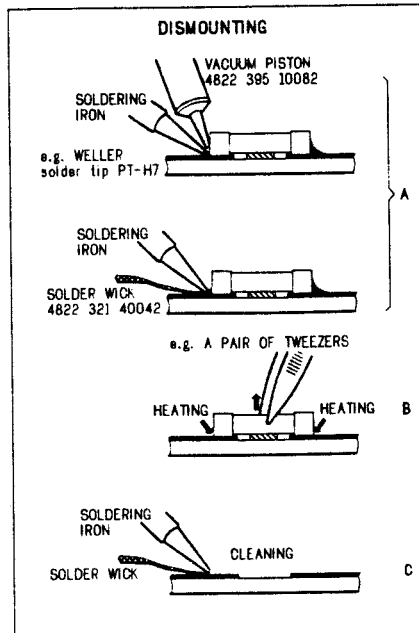
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Gerätes darf nicht verändert werden. Für Reparaturen sind Originalersatzteile zu verwenden.

**(S) Varning !**

Osynlig laserstrålning när apparaten är öppnad och spårar är urkopplad. Beträkta ej strålen.

**(F)**

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

**ESD****(D) WARNUNG**

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD). Unvorsichtige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren. Sorgen Sie dafür, daß Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind. Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

**(I)**

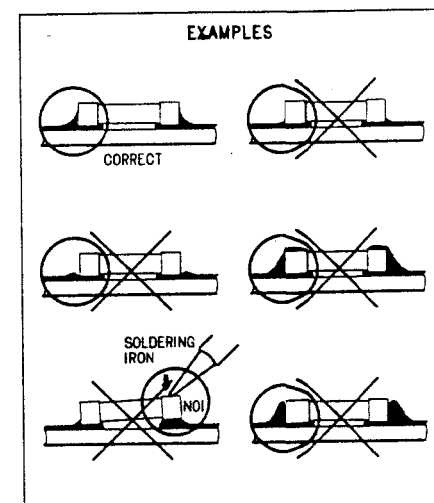
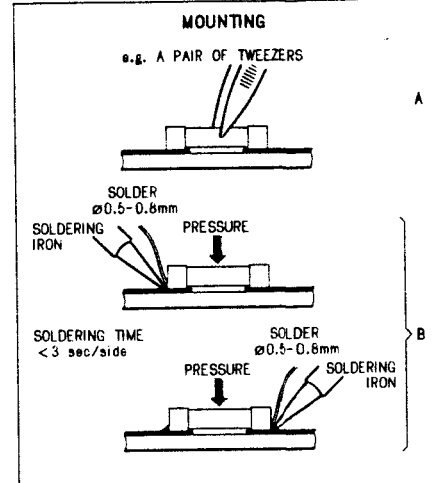
Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

**(F)**

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

**(DK) Advarsel !**

Usynlig laserstrålning ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

**(NL) WAARSCHUWING**

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD). Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat. Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

**(I) AVVERTIMENTO**

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD). La loro longevità potrebbe essere fortemente ridotta in caso di non osservazione della più grande cautela e alla loro manipolazione. Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un bracciale con resistenza. Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

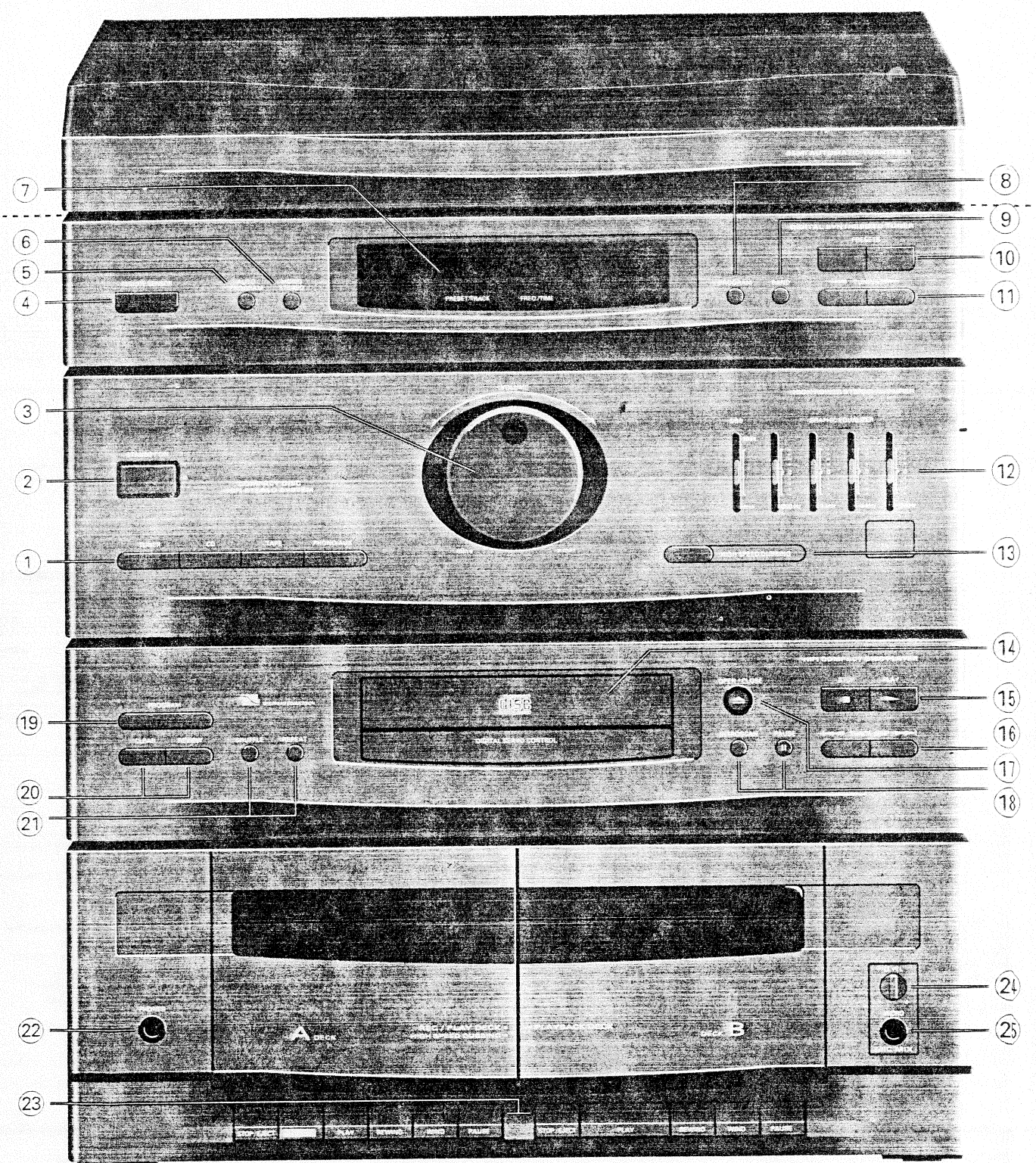
**(NL)**

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggeleverd en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

**(SF) Varoitus !**

Avatussa laitteessa ja suojalukituksen oltua auki on alatiina näkymättömälle laserisäteilylle. Älä katsa silmiin !

## Connection & Controls



- |                         |                 |                             |                 |
|-------------------------|-----------------|-----------------------------|-----------------|
| 1 Source selector       | see page 25, 26 | 11 Tuning                   | see page 29, 30 |
| Tuner .....             | 1440            | Up .....                    | 1421            |
| CD .....                | 1438            | Down .....                  | 1422            |
| Tape .....              | 1444            | 12 Graphic Equalizer        | see page 25, 26 |
| Phono/Aux .....         | 1437            | 100Hz/DBB .....             | 3485            |
| 2 Stand by .....        | 1439            | 300Hz .....                 | 3484            |
| 3 Volume .....          | 3480            | 1kHz .....                  | 3483            |
| 4 Remote sensor .....   | 7422            | 4kHz .....                  | 3482            |
| 5 Auto Program .....    | 1436            | 10kHz .....                 | 3481            |
| 6 Mono/Stereo .....     | 1448            | 13 High Speed Dubbing ..... | 1433            |
| 7 Display .....         | 1415            | 14 CD Tray                  |                 |
| 8 Program (Tuner) ..... | 1435            | 15 Stop (CD) .....          | 1424            |
| 9 Band .....            | 1434            | Play (CD) .....             | 1428            |
| 10 Presets              | see page 29, 30 | 16 Track skip (CD)          |                 |
| Up .....                | 1425            | ◀◀ .....                    | 1431            |
| Down .....              | 1426            | ▶▶ .....                    | 1432            |

see page 29, 30

see page 25, 26

see page 29, 30

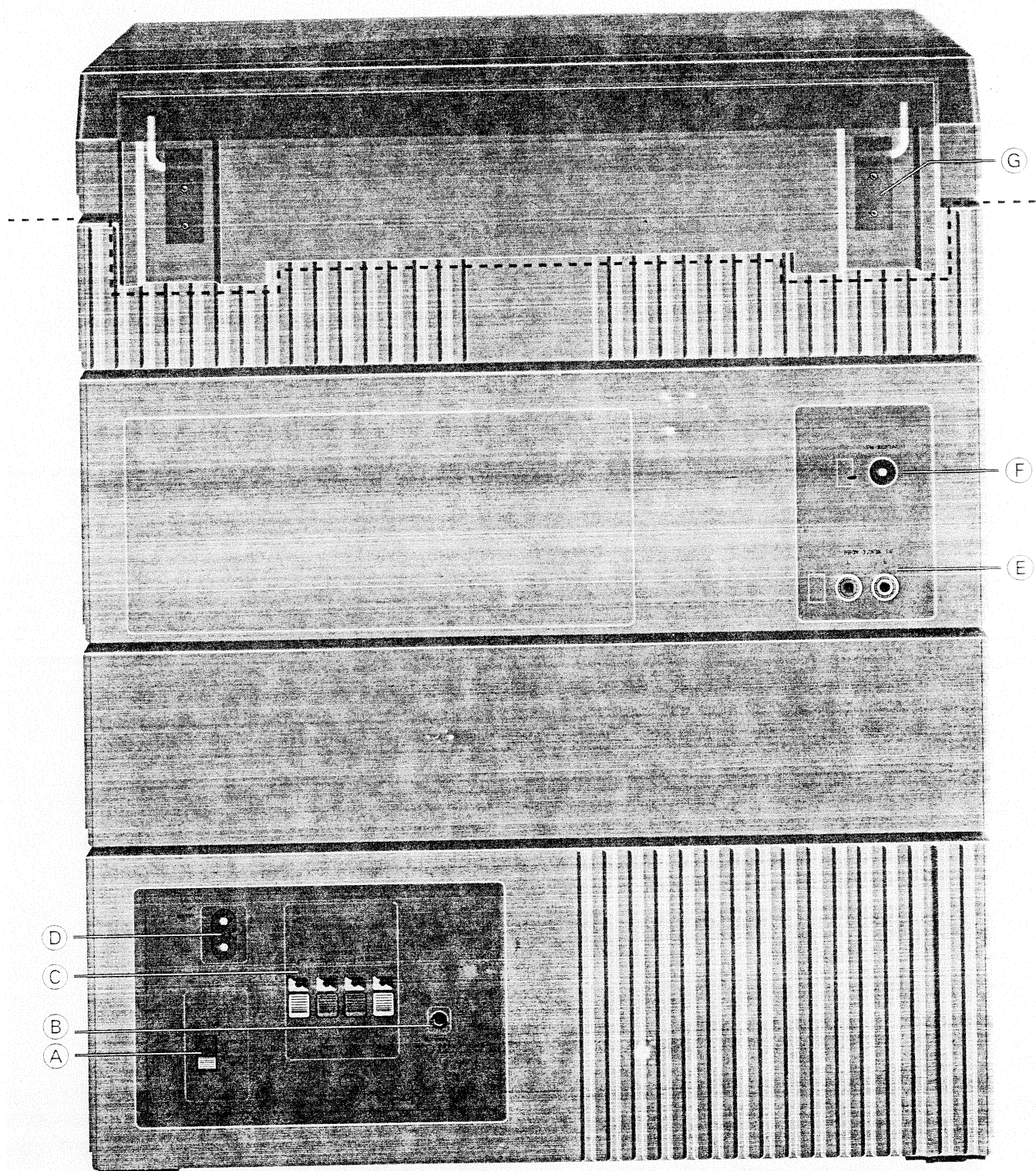
see page 29, 30

see page 29, 30

see page 29, 30

see page 29, 30





- 17 Open/Close (CD) .....1427  
 18 Introsan (CD) .....1429  
     Pause (CD) .....1430  
 19 Program (CD) .....1441  
 20 Clear (CD) .....1446  
 21 Review (CD) .....1447  
 22 Headphone socket .....1410  
 23 Tape transport keys .....mechanical  
 24 Micro Mix Level .....3905  
 25 Microphone socket .....1900

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 see page 29, 30  
 see page 29, 30  
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 see page 29, 30  
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 see page 22  
 see page 22

- A Voltage selector .....1260  
 B Phono supply .....1305  
 C Speaker terminal .....1304  
 D Mains socket .....1255  
 E Aux / Phono sockets .....1408  
 F FM aerial socket .....1101  
     for ECO 4 Tuner  
     FM aerial socket .....1110  
     for Tuner 92

see page 39  
 see page 37, 38  
 see page 37, 38  
 see page 39  
 see page 25, 26  
 see page 40  
 see page 46

## Service Hints

### Version Table (Quick reference)

	AS440 /00, /20, /20P	AS440 /02, /22, /22P	AS440 /05, /25, /25P	AS440 /17, /37,	AS445 /00, /20	AS445 /01, /21	AS445 /05, /25	AS445 /10, /30
<b>Mains cord</b>								
4822 321 10954								X
4822 321 10831	X	X			X	X		
4822 321 10883				X				
4822 321 10918			X				X	
<b>Mains transformer</b>								
4822 146 31239	X	X			X			
4822 146 31234				X				
4822 146 31235						X		X
4822 146 31254			X				X	
<b>Mains socket</b>								
4822 265 31015	X	X	X		X	X	X	X
4822 265 31016				X				
<b>Voltage selector</b>								
4822 272 10269						X		X
<b>IR Remote control</b>								
4822 218 10513	X	X	X	X	X	X	X	X
<b>Loudspeaker box</b>								
4822 445 10359	X	X	X		X		X	
4822 445 10361				X				
4822 445 10362						X		X
<b>Tuner</b>								
ECO4 Tuner	X		X	X	X	X	X	X
Tuner 92		X						
<b>Record player</b>								
DL-40					X	X	X	X
<b>Micro Mix function</b>								
available						X		X

## Service tools

**TORX screwdriver set SBC 163** 4822 395 50145  
**Audio signal disc SBC 429** 4822 397 30184  
**Test disc 5** (disc without errors)  
**Test disc 5A** (disc with dropout errors, black spots and finger prints)  
**SBC 426/426A** 4822 397 30096

**Burn in test disc** (65 min. 1kHz signal at -30dB level without "pause")

Universal **test cassette Fe** SBC 420 4822 397 30071  
 Universal **test cassette CrO<sub>2</sub>** SBC 419 4822 397 30069

Instruction for use (all versions except /37) 4822 736 21737  
 Instruction for use (for /37) 4822 736 21738

## Dismantling of:

**CD Brick** : see page 52

### Front assy

- \* Remove top cover as shown in picture 1.
- \* Remove right side of the cabinet (10 screws)
- \* Remove 3 bottom screws and 3 screws from left side wall on front side.
- \* Remove 1 screw to CD metal support on rear.
- \* Release 2 snaps (bottom-front) and turn whole front assy aside.

### Tape Transports

- \* Separate Front assy as described above
- \* Loosen Recorder assy (6 screws)

### Power Board

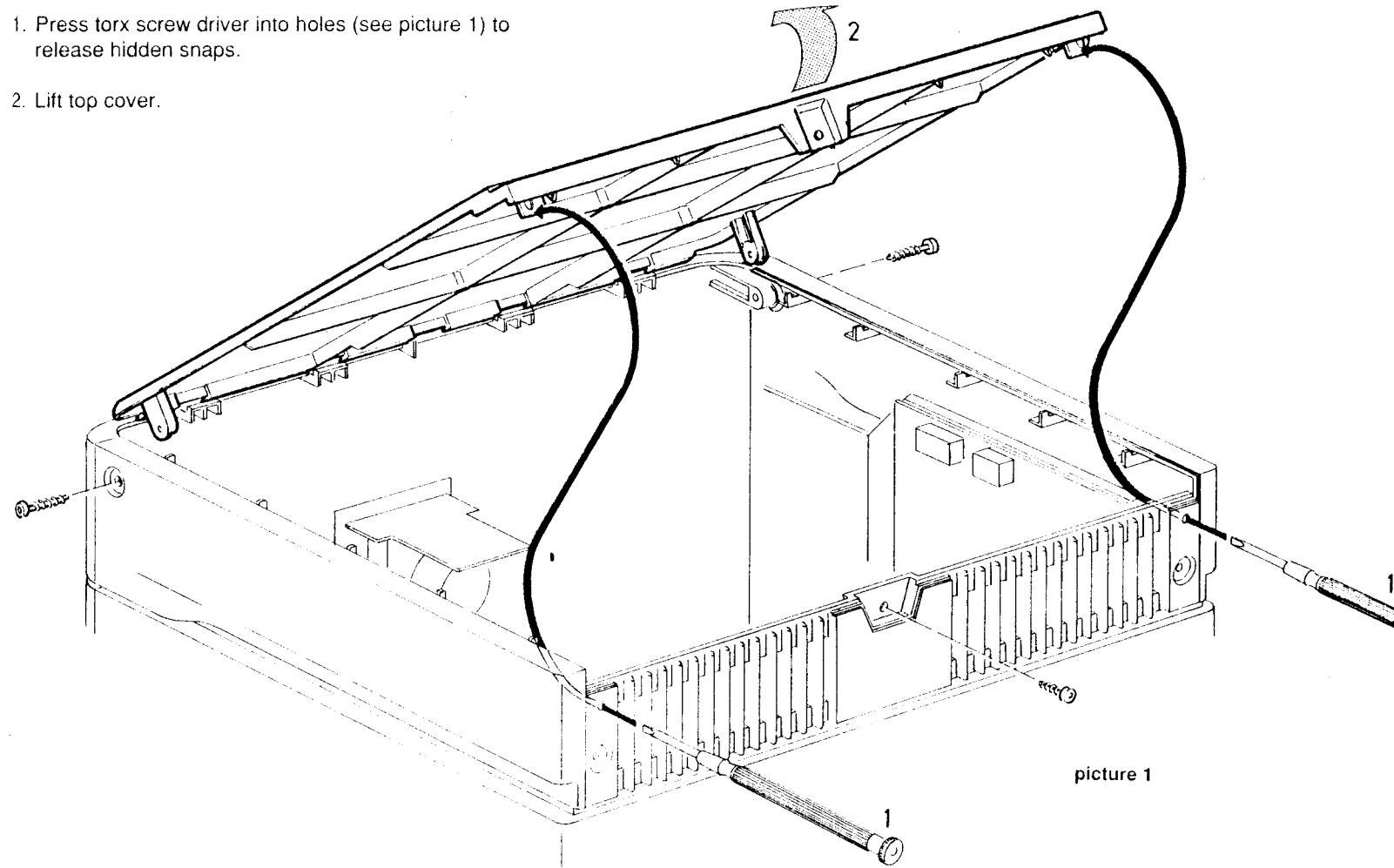
- \* Remove top cover as shown in picture 1
  - \* Remove rear part of cabinet (20 screws).
  - \* Loosen power board (4 screws).
  - \* Take power board and place it behind the set.
- Remarks : Cable to headphone socket has to be disconnected.  
 Remove CD brick if necessary.

## Dismantling Hints

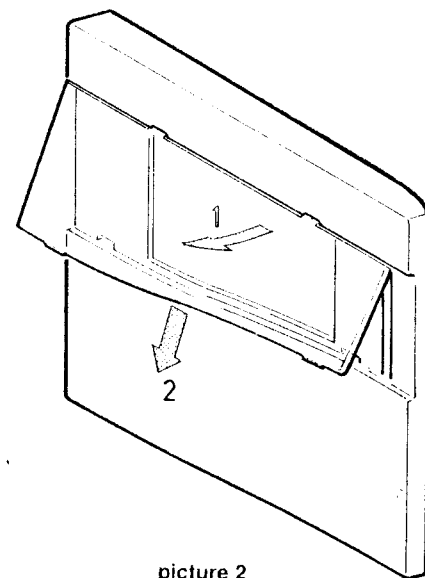
### Dismantling of Top Cover

Remove 3x screws.

1. Press torx screw driver into holes (see picture 1) to release hidden snaps.
2. Lift top cover.

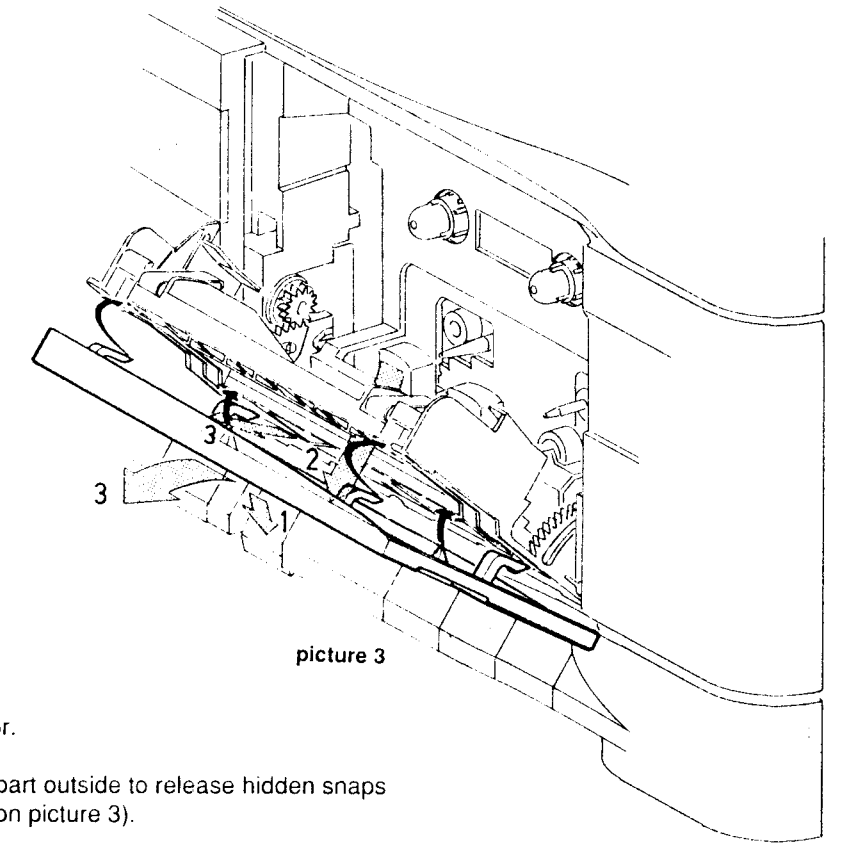


### Dismantling Window of Cassette Door



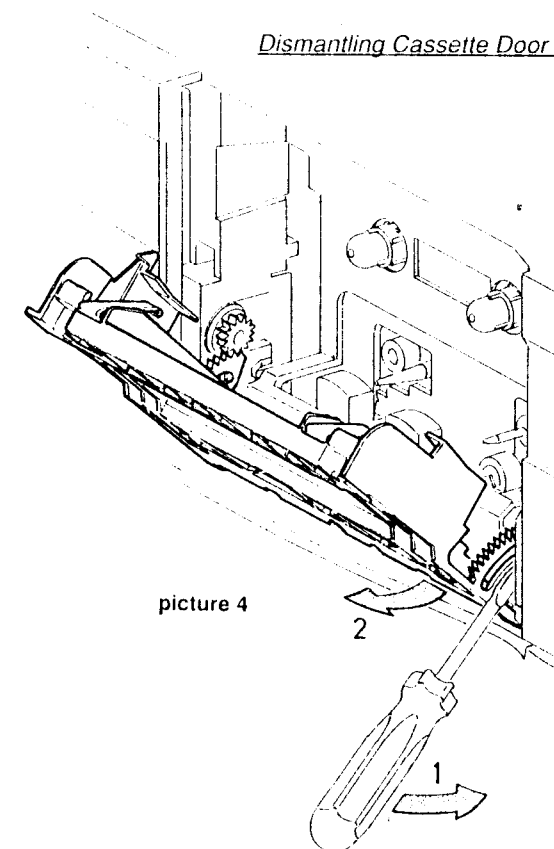
- 1) Press the window outside as shown in picture 2. You don't need any tool.

### Dismantling Cassette Door Ornamental Part



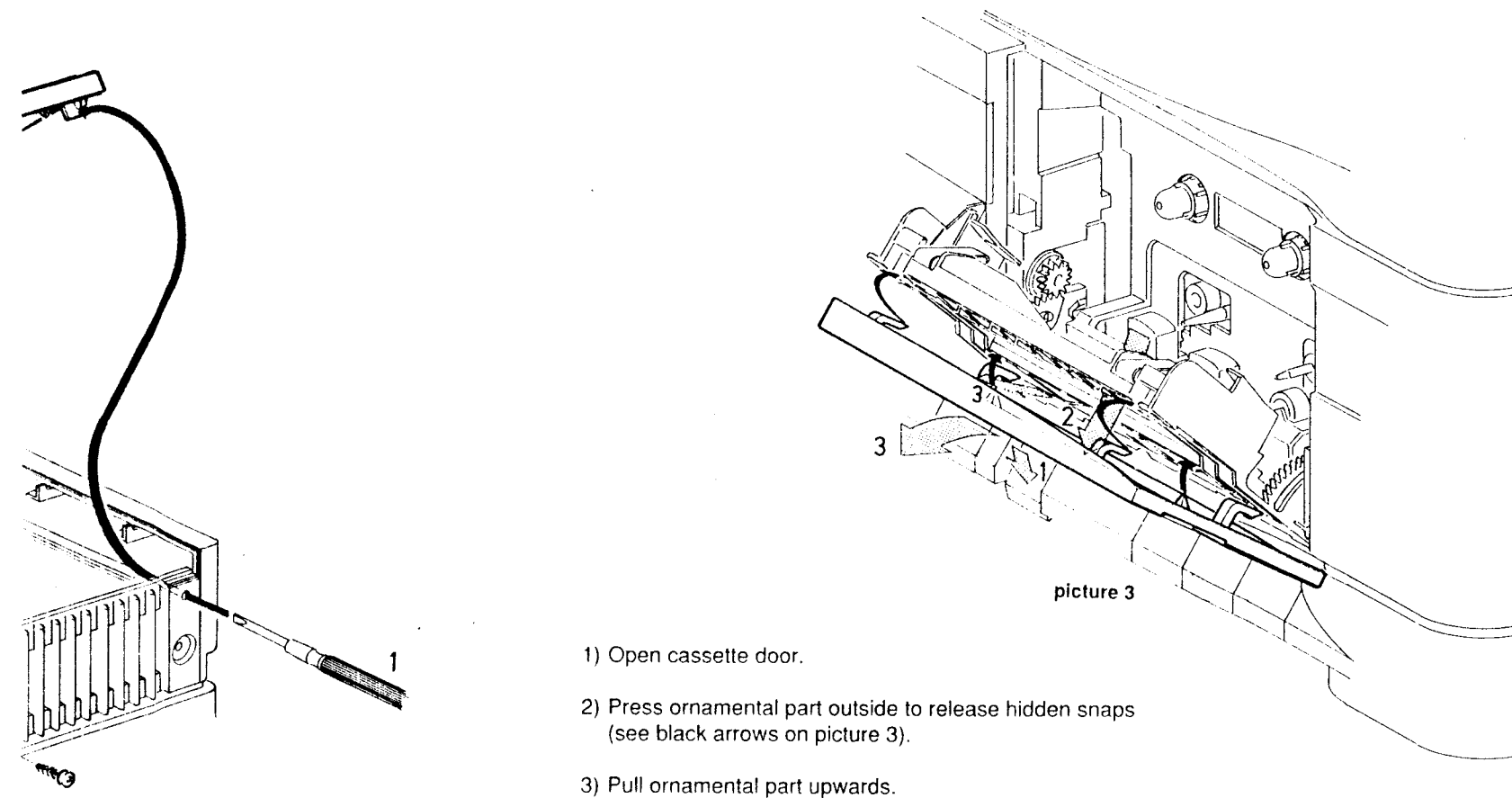
- 1) Open cassette door.
- 2) Press ornamental part outside to release hidden snaps (see black arrows on picture 3).
- 3) Pull ornamental part upwards.

### Dismantling Cassette Door Technical Part



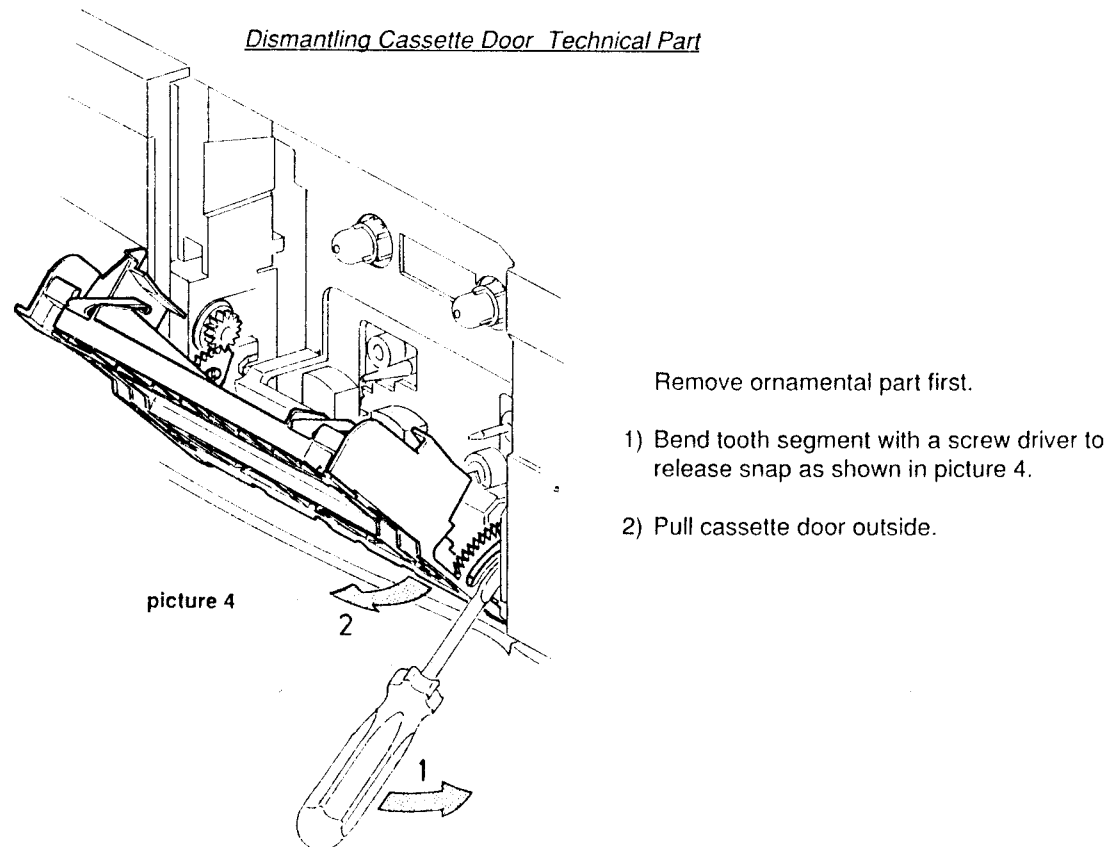
Remove ornamental part first.

- 1) Bend tooth segment with a screw driver to release snap as shown in picture 4.
- 2) Pull cassette door outside.

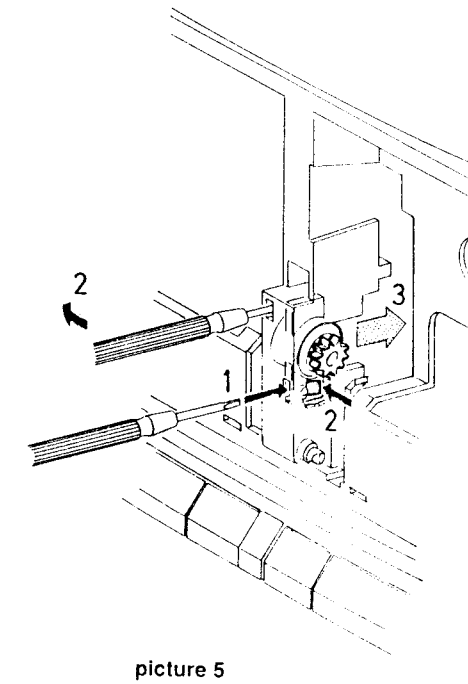
Dismantling Cassette Door Ornamental Part

picture 1

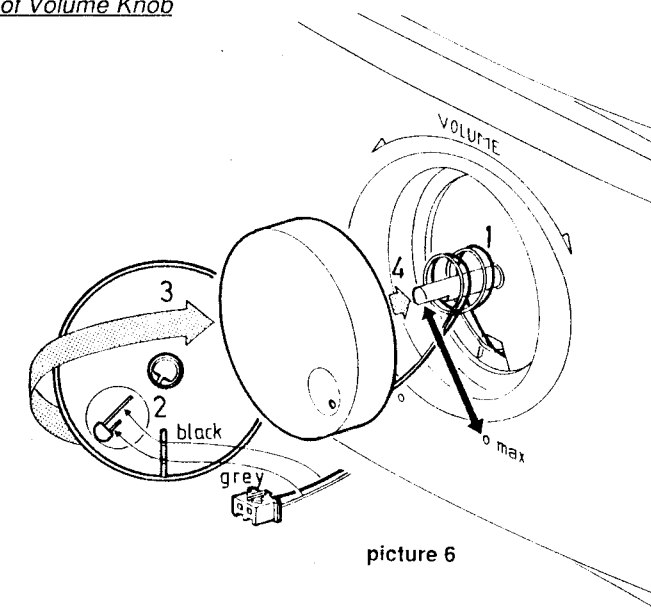
picture 3

Dismantling Cassette Door Technical Part

picture 4

Dismantling of Damper

picture 5

Mounting of Volume Knob

picture 6



# SERVICE TEST PROGRAM

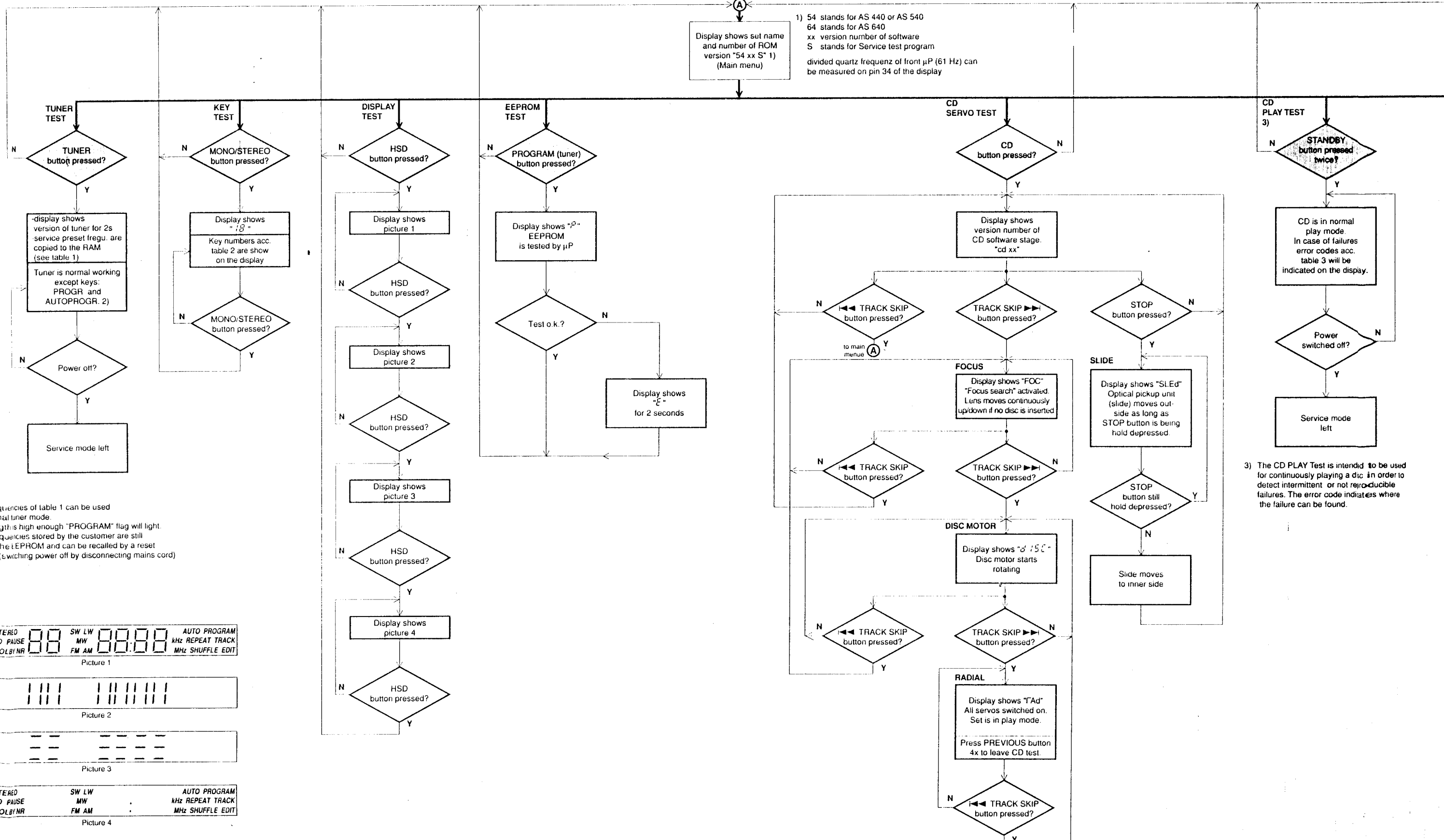
The service test program can be left:

- at each step: by switching power off (disconnect mains)
- from service main menu: by pressing the Standby button twice the set is switched to normal working mode except: \* in TUNER mode still the service preset frequencies are available.
- \* in CD mode the error codes will be displayed.

To start service test program hold  
PROGR. & PRESET UP  
buttons depressed while  
plugging in the mains cord

Display shows set name  
and number of ROM  
version "54 xx S" 1)  
(Main menu)

- 1) 54 stands for AS 440 or AS 540  
64 stands for AS 640  
xx version number of software  
S stands for Service test program  
divided quartz frequency of front  $\mu$ P (61 Hz) can  
be measured on pin 34 of the display



2) Preset frequencies of table 1 can be used as in normal tuner mode. If field strength is high enough "PROGRAM" flag will light. Preset frequencies stored by the customer are still stored in the EEPROM and can be recalled by a reset of the  $\mu$ P (switching power off by disconnecting mains cord)

RECORD STEREO SW LW AUTO PROGRAM  
FERRO HSD PAUSE MW kHz REPEAT TRACK  
CHROME DOLBY NR FM AM MHz SHUFFLE EDIT

Picture 1

Picture 2

Picture 3

RECORD STEREO SW LW AUTO PROGRAM  
FERRO HSD PAUSE MW kHz REPEAT TRACK  
CHROME DOLBY NR FM AM MHz SHUFFLE EDIT

Picture 4

3) The CD PLAY Test is intended to be used for continuously playing a disc in order to detect intermittent or not reproducible failures. The error code indicates where the failure can be found.

To start service test program hold  
PROGR. & PRESET UP  
buttons depressed while  
plugging in the mains cord

Display shows set name  
and number of ROM  
version "54 xx S" 1)  
(Main menu)

1) 54 stands for AS 440 or AS 540  
64 stands for AS 640  
xx version number of software  
S stands for Service test program  
divided quartz frequenz of front  $\mu$ P (61 Hz) can  
be measured on pin 34 of the display

CD  
SERVO TEST

CD  
button pressed?

Display shows  
version number of  
CD software stage.  
"cd xx"

TRACK SKIP  
button pressed?

to main  
menue

TRACK SKIP  
button pressed?

FOCUS  
Display shows "FOC"  
"Focus search" activated.  
Lens moves continuously  
up/down if no disc is inserted

TRACK SKIP  
button pressed?

TRACK SKIP  
button pressed?

## DISC MOTOR

Display shows "d 15C"  
Disc motor starts  
rotating

TRACK SKIP  
button pressed?

TRACK SKIP  
button pressed?

## RADIAL

Display shows "TAd"  
All servos switched on.  
Set is in play mode.  
Press PREVIOUS button  
4x to leave CD test.

TRACK SKIP  
button pressed?

CD  
PLAY TEST  
3)

STANDBY  
button pressed  
twice?

CD is in normal  
play mode.  
In case of failures  
error codes acc.  
table 3 will be  
indicated on the display.

Power  
switched off?

Service mode  
left

3) The CD PLAY Test is intended to be used  
for continuously playing a disc in order to  
detect intermittent or not reproducible  
failures. The error code indicates where  
the failure can be found.

VOLUME  
POTENTIOMETER  
TEST

TUNING UP  
button pressed ?

TUNING DOWN  
button pressed ?

Volume knob  
turns clockwise  
Display shows "U"

Volume knob  
turns counter clockwise  
Display shows "d"

With the TUNING UP and  
TUNING DOWN buttons the  
volume pot. can be controlled  
alternatively

Any other  
button pressed?

Volume motor stops.  
Back to main menu  
or switch over directly to  
another test which can be  
activated by the choosen key

CLEAR  
EEPROM  
4)

AUTOPROGRAM  
button pressed?

Display shows  
"E"  
for 2 seconds  
EEPROM is cleared


4) Use this mode only in  
case of a  $\mu$ P "hang up"  
to clear the EEPROM.  
Attention: All preset frequencies  
stored by the customer  
will be cleared.

PRESET	VERSION						
	EUR	EAS	USA	EUS	OSE	OSS	
	Europe 3-band	East Europe 3-band	USA 2-band	Europe 4-band	Oversea 2-band	Oversea 3-band	UNIT
1	87,5	65,81	87,5	87,5	87,5	87,5	MHz
2	108	74	108	108	108	108	MHz
3	98	87,5	98	98	98	98	MHz
4	89,7	108	89,7	89,7	89,7	89,7	MHz
5	93	98	93	93	93	93	MHz
6	104,9	89,7	104,9	104,9	104,9	104,9	MHz
7	522	93	530	522	530	530	kHz
8	1611	104,9	1710	1611	1710	1710	kHz
9	540	522	540	540	540	540	kHz
10	549	1611	550	549	550	550	kHz
11	558	540	560	558	560	560	kHz
12	1494	549	1500	1494	1500	1500	kHz
13	153	558	1600	153	1600	1600	kHz
14	279	1494	1000	279	1000	3900	kHz
15	156	153		156		12100	kHz
16	198	279		198		4250	kHz
17	270	156		270		8000	kHz
18	999	198		5900		11900	kHz
19		270		18100		1000	kHz
20		999		6200			kHz
21				17000			kHz
22				12000			kHz
23				999			kHz

table 1

Key activated	Display shows	Key activated	Display shows
Tuning up	01	Autoprogram	17
Tuning down	03	Mono / Stereo	18
Preset up	04	Tuner	19
Preset down	02	Stand by	20
Dolby <sup>1)</sup>	05	Tape	21
Band	06	Phono / Aux	22
Program(Tuner)	07	CD	23
Fe/Cr <sup>1)</sup>	08	—	—
Introsan	09	Repeat	25
Pause (CD)	10	Shuffle	26
« Track skip	11	Review	27
Track skip »	12	Clear	28
HS dubbing	13	—	—
Open/Close	14	Edit <sup>1)</sup>	30
Stop (CD)	15	—	—
Play (CD)	16	Program (CD)	32

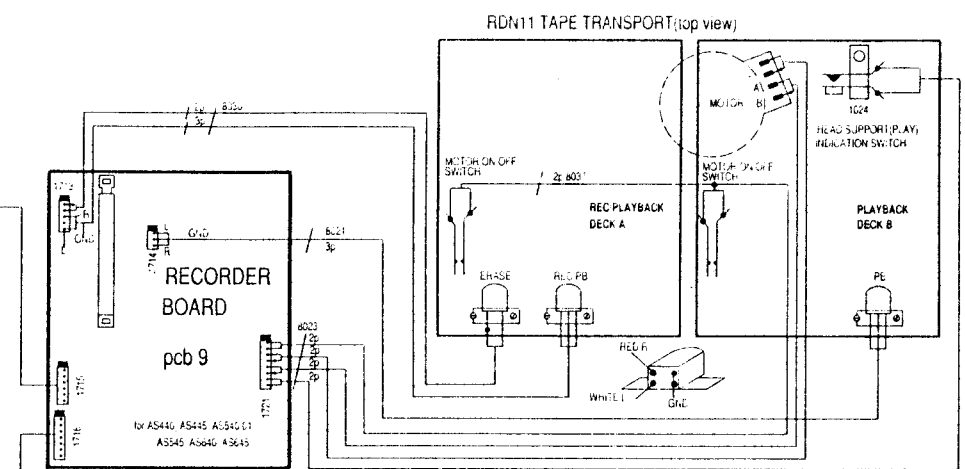
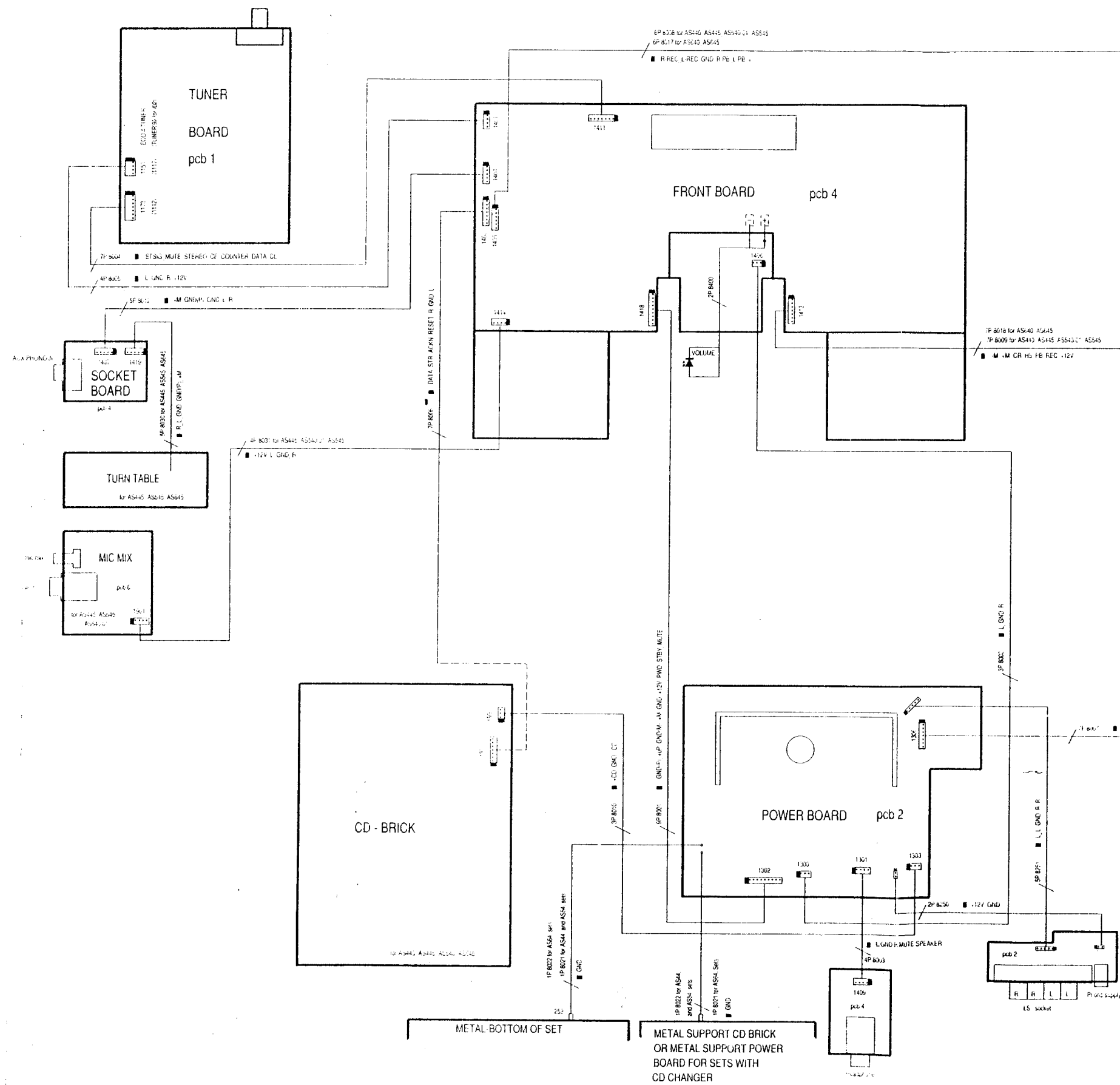
table 2

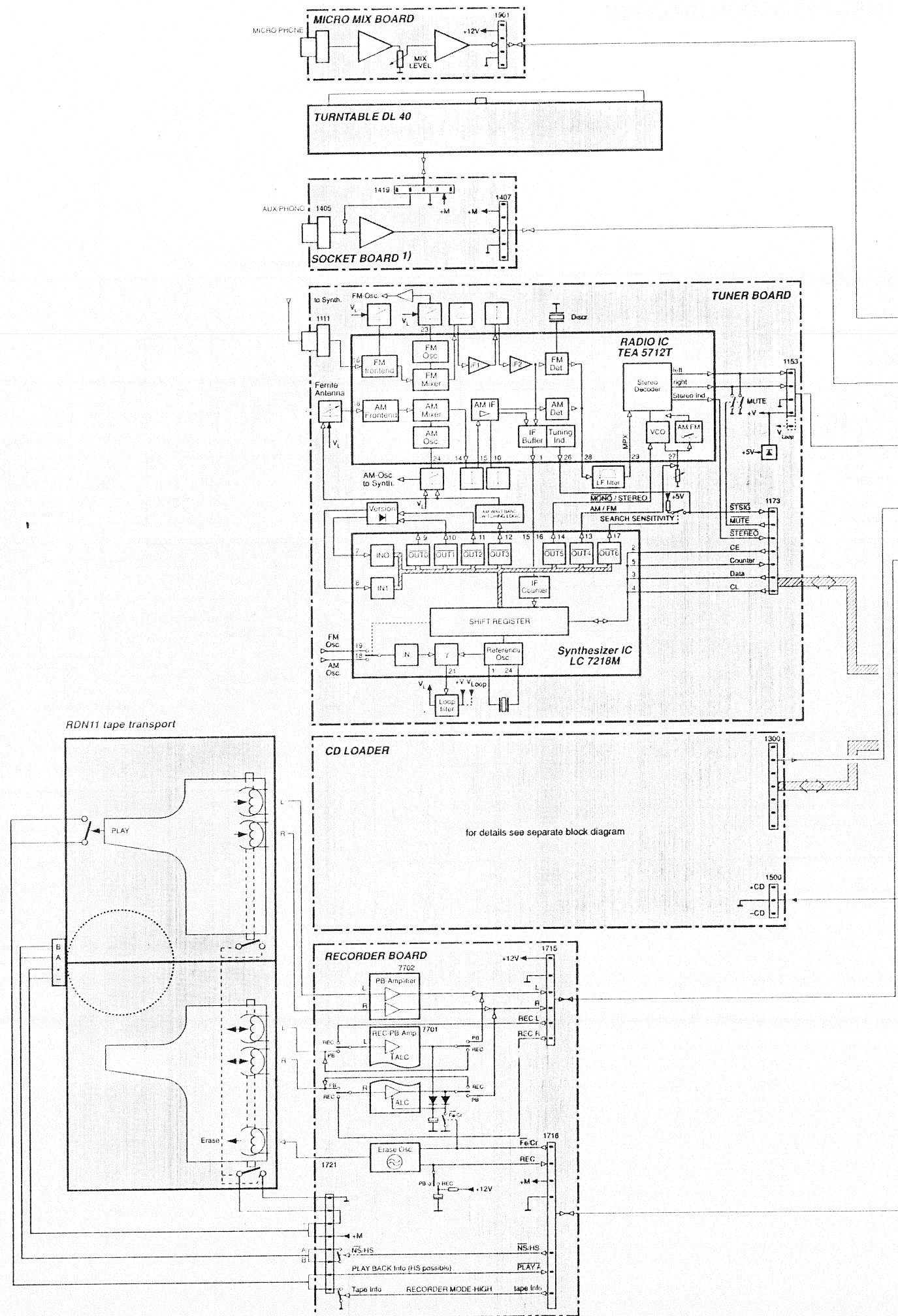
If a key is activated at the remote control  is shown additionally to the key number as long as the key is hold depressed.

1) key not available in all versions.

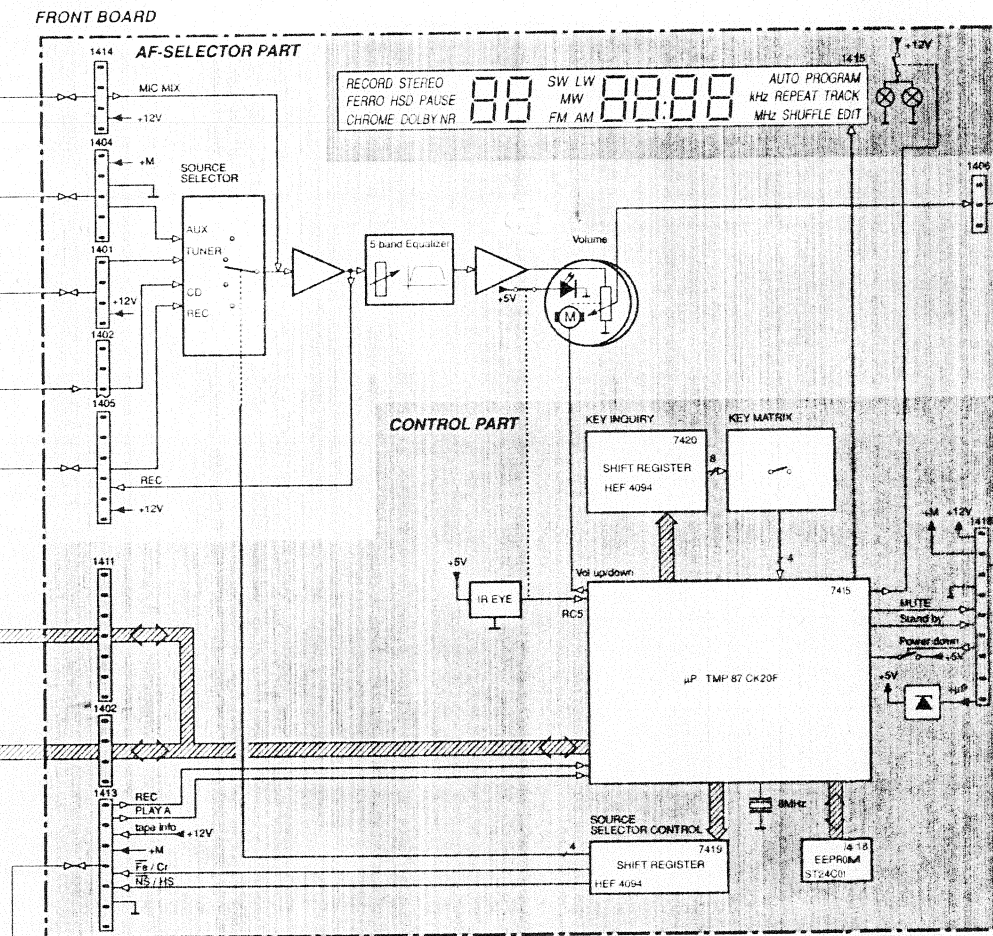
Error code shown on the display	Description
Er 1002	Focus error
Er 1007	Subcode error, no valid subcode
Er 1008	TOC error, out of lead-in area while reading TOC
Er 1009	CD4 + decoder error
Er 1010	Radial error
Er 1012	Fatal sledge error
Er 1013	Turntable motor error
Er 1030	Too many grooves to jump
Er 1031	Search error
Er 1032	Search binary error
Er 1033	Search index error
Er 1034	Search time error
Er 1037	Selector error
Er 1050	Edit calculation error
Er 1051	Edit track count error
Er 1052	Edit Optimal error

table 3



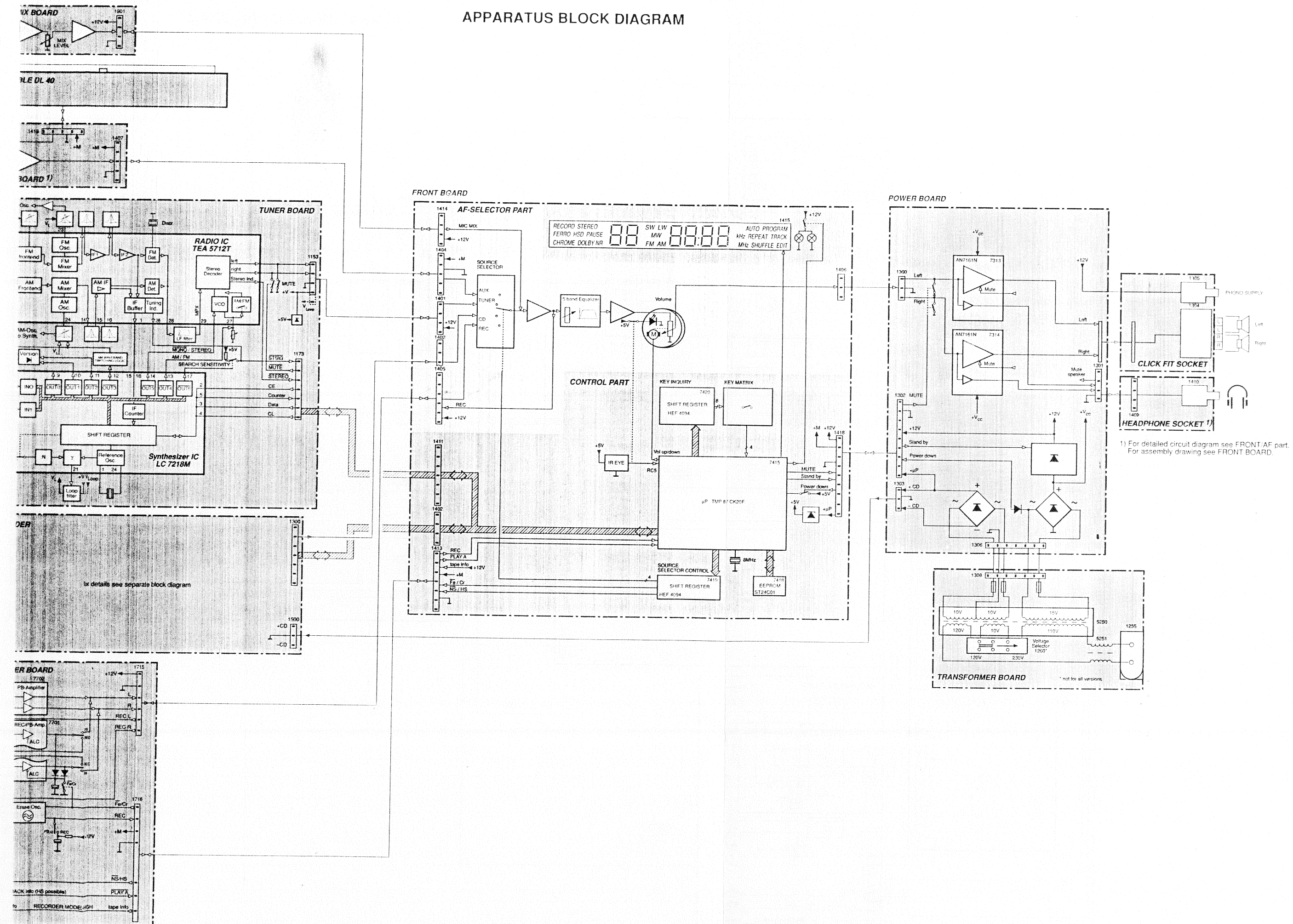


## APPARATUS BLOCK DIAGRAM





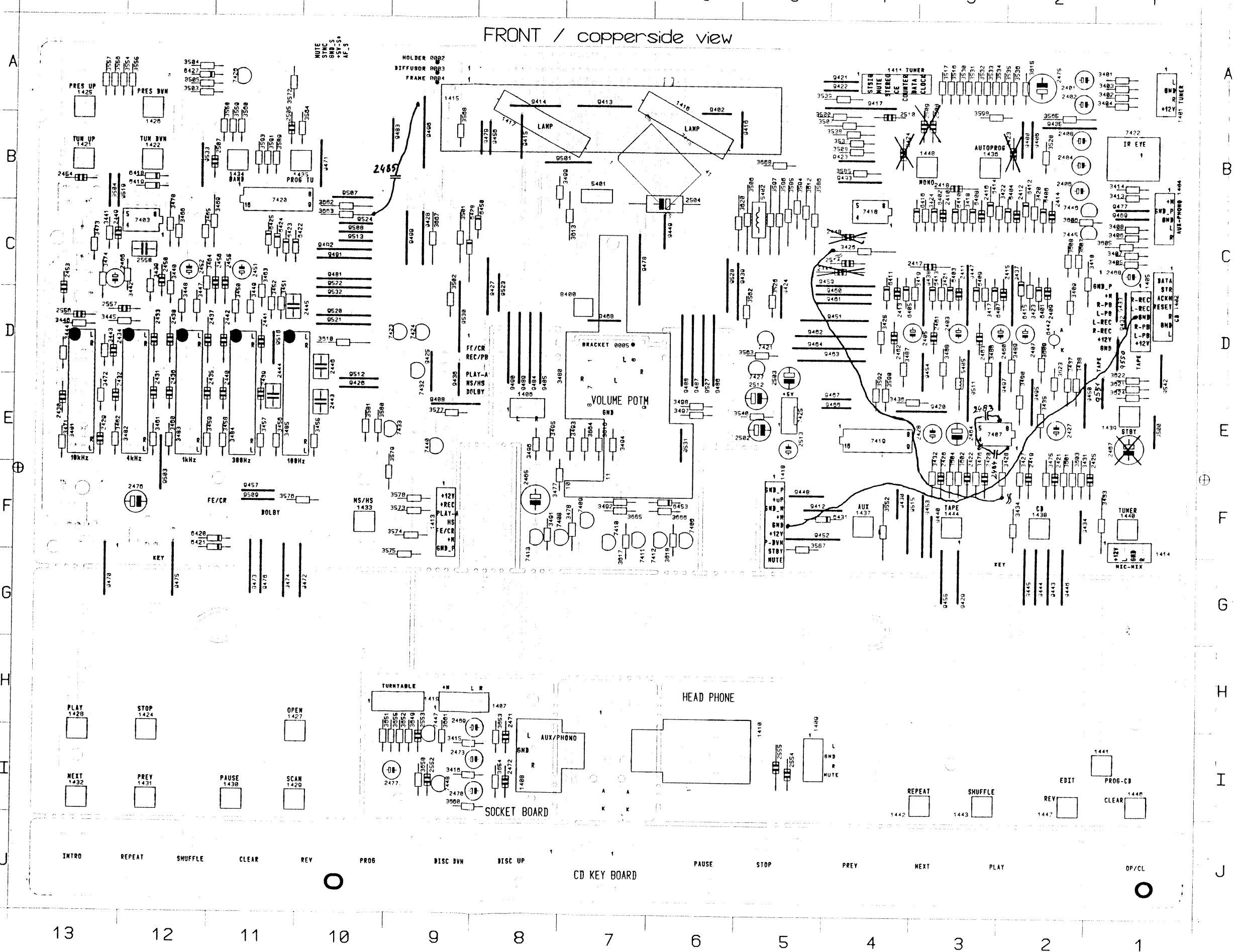
## APPARATUS BLOCK DIAGRAM



## Micro Mix only in versions with Record Player

1406	B	C	1407	E	1408	E	1409	E	1410	E	1411	E	1412	E	1413	E	1414	E	1415	E	1416	E	1417	E	1418	E	1419	E	1420	E	1421	E	1422	E	1423	E	1424	E	1425	E	1426	E	1427	E	1428	E	1429	E	1430	E	1431	E	1432	E	1433	E	1434	E	1435	E	1436	E	1437	E	1438	E	1439	E	1440	E	1441	E	1442	E	1443	E	1444	E	1445	E	1446	E	1447	E	1448	E	1449	E	1450	E	1451	E	1452	E	1453	E	1454	E	1455	E	1456	E	1457	E	1458	E	1459	E	1460	E	1461	E	1462	E	1463	E	1464	E	1465	E	1466	E	1467	E	1468	E	1469	E	1470	E	1471	E	1472	E	1473	E	1474	E	1475	E	1476	E	1477	E	1478	E	1479	E	1480	E	1481	E	1482	E	1483	E	1484	E	1485	E	1486	E	1487	E	1488	E	1489	E	1490	E	1491	E	1492	E	1493	E	1494	E	1495	E	1496	E	1497	E	1498	E	1499	E	1500	E	1501	E	1502	E	1503	E	1504	E	1505	E	1506	E	1507	E	1508	E	1509	E	1510	E	1511	E	1512	E	1513	E	1514	E	1515	E	1516	E	1517	E	1518	E	1519	E	1520	E	1521	E	1522	E	1523	E	1524	E	1525	E	1526	E	1527	E	1528	E	1529	E	1530	E	1531	E	1532	E	1533	E	1534	E	1535	E	1536	E	1537	E	1538	E	1539	E	1540	E	1541	E	1542	E	1543	E	1544	E	1545	E	1546	E	1547	E	1548	E	1549	E	1550	E	1551	E	1552	E	1553	E	1554	E	1555	E	1556	E	1557	E	1558	E	1559	E	1560	E	1561	E	1562	E	1563	E	1564	E	1565	E	1566	E	1567	E	1568	E	1569	E	1570	E	1571	E	1572	E	1573	E	1574	E	1575	E	1576	E	1577	E	1578	E	1579	E	1580	E	1581	E	1582	E	1583	E	1584	E	1585	E	1586	E	1587	E	1588	E	1589	E	1590	E	1591	E	1592	E	1593	E	1594	E	1595	E	1596	E	1597	E	1598	E	1599	E	1600	E	1601	E	1602	E	1603	E	1604	E	1605	E	1606	E	1607	E	1608	E	1609	E	1610	E	1611	E	1612	E	1613	E	1614	E	1615	E	1616	E	1617	E	1618	E	1619	E	1620	E	1621	E	1622	E	1623	E	1624	E	1625	E	1626	E	1627	E	1628	E	1629	E	1630	E	1631	E	1632	E	1633	E	1634	E	1635	E	1636	E	1637	E	1638	E	1639	E	1640	E	1641	E	1642	E	1643	E	1644	E	1645	E	1646	E	1647	E	1648	E	1649	E	1650	E	1651	E	1652	E	1653	E	1654	E	1655	E	1656	E	1657	E	1658	E	1659	E	1660	E	1661	E	1662	E	1663	E	1664	E	1665	E	1666	E	1667	E	1668	E	1669	E	1670	E	1671	E	1672	E	1673	E	1674	E	1675	E	1676	E	1677	E	1678	E	1679	E	1680	E	1681	E	1682	E	1683	E	1684	E	1685	E	1686	E	1687	E	1688	E	1689	E	1690	E	1691	E	1692	E	1693	E	1694	E	1695	E	1696	E	1697	E	1698	E	1699	E	1700	E	1701	E	1702	E	1703	E	1704	E	1705	E	1706	E	1707	E	1708	E	1709	E	1710	E	1711	E	1712	E	1713	E	1714	E	1715	E	1716	E	1717	E	1718	E	1719	E	1720	E	1721	E	1722	E	1723	E	1724	E	1725	E	1726	E	1727	E	1728	E	1729	E	1730	E	1731	E	1732	E	1733	E	1734	E	1735	E	1736	E	1737	E	1738	E	1739	E	1740	E	1741	E	1742	E	1743	E	1744	E	1745	E	1746	E	1747	E	1748	E	1749	E	1750	E	1751	E	1752	E	1753	E	1754	E	1755	E	1756	E	1757	E	1758	E	1759	E	1760	E	1761	E	1762	E	1763	E	1764	E	1765	E	1766	E	1767	E	1768	E	1769	E	1770	E	1771	E	1772	E	1773	E	1774	E	1775	E	1776	E	1777	E	1778	E	1779	E	1780	E	1781	E	1782	E	1783	E	1784	E	1785	E	1786	E	1787	E	1788	E	1789	E	1790	E	1791	E	1792	E	1793	E	1794	E	1795	E	1796	E	1797	E	1798	E	1799	E	1800	E	1801	E	1802	E	1803	E	1804	E	1805	E	1806	E	1807	E	1808	E	1809	E	1810	E	1811	E	1812	E	1813	E	1814	E	1815	E	1816	E	1817	E	1818	E	1819	E	1820	E	1821	E	1822	E	1823	E	1824	E	1825	E	1826	E	1827	E	1828	E	1829	E	1830	E	1831	E	1832	E	1833	E	1834	E	1835	E	1836	E	1837	E	1838	E	1839	E	1840	E	1841	E	1842	E	1843	E	1844	E	1845	E	1846	E	1847	E	1848	E	1849	E	1850	E	1851	E	1852	E	1853	E	1854	E	1855	E	1856	E	1857	E	1858	E	1859	E	1860	E	1861	E	1862	E	1863	E	1864	E	1865	E	1866	E	1867	E	1868	E	1869	E	1870	E	1871	E	1872	E	1873	E	1874	E	1875	E	1876	E	1877	E	1878	E	1879	E	1880	E	1881	E	1882	E	1883	E	1884	E	1885	E	1886	E	1887	E	1888	E	1889	E	1890	E	1891	E	1892	E	1893	E	1894	E	1895	E	1896	E	1897	E	1898	E	1899	E	1900	E	1901	E	1902	E	1903	E	1904	E	1905	E	1906	E	1907	E	1908	E	1909	E	1910	E	1911	E	1912	E	1913	E	1914	E	1915	E	1916	E	1917	E	1918	E	1919	E	1920	E	1921	E	1922	E	1923	E	1924	E	1925	E	1926	E	1927	E	1928	E	1929	E	1930	E	1931	E	1932	E	1933	E	1934	E	1935	E	1936	E	1937	E	1938	E	1939	E	1940	E	1941	E	1942	E	1943	E	1944	E	1945	E	1946	E	1947	E	1948	E	1949	E	1950	E	1951	E	1952	E	1953	E	1954	E	1955	E	1956	E	1957	E	1958	E	1959	E	1960	E	1961	E	1962	E	1963	E	1964	E	1965	E	1966	E	1967	E	1968	E	1969	E	1970	E	1971	E	1972	E	1973	E	1974	E	1975	E	1976	E	1977	E	1978	E	1979	E	1980	E	1981	E	1982	E	1983	E	1984	E	1985	E	1986	E	1987	E	1988	E	1989	E	1990	E	1991	E	1992	E	1993	E	1994	E	1995	E	1996	E	1997	E	1998	E	1999	E	2000	E	2001	E	2002	E	2003	E	2004	E	2005	E	2006	E	2007	E	2008	E	2009	E	2010	E	2011	E	2012	E	2013	E	2014	E	2015	E	2016	E	2017	E	2018	E	2019	E	2020	E	2021	E	2022	E	2023	E	2024	E	2025	E	2026	E	2027	E	2028	E	2029	E	2030	E	2031	E	2032	E	2033	E	2034	E	2035	E	2036	E	2037	E	2038	E	2039	E	2040	E	2041	E	2042	E	2043	E	2044	E	2045	E	2046	E	2047	E	2048	E	2049	E	2050	E	2051	E	2052	E	2053	E	2054	E	2055	E	2056	E	2057	E	2058	E	2059	E	2060	E	2061	E	2062	E	2063	E	2064	E	2065	E	2066	E	2067	E	2068	E	2069	E	2070	E	2071	E	2072	E	2073	E	2074	E	2075	E	2076	E	2077	E	2078	E	2079	E	2080	E	2081	E	2082	E	2083	E	2084	E	2085	E	2086	E	2087	E	2088	E	2089	E	2090	E	2091	E	2092	E	2093	E	2094	E	2095	E	2096	E	2097	E	2098	E	2099	E	2100	E	2101	E	2102	E	2103	E	2104	E	2105	E	2106	E	2107	E	2108	E	2109	E	2110	E	2111	E	2112	E	2113	E	2114	E	2115	E	2116	E	2117	E	2118	E	2119	E	2120	E	2121	E	2122	E	2123	E	2124	E	2125	E	2126	E	2127	E	2128	E	2129	E	2130	E	2131	E	2132	E	2133	E	2134	E	2135	E	2136	E	2137	E	2138	E	2139	E	2140	E	2141	E	2142	E	2143	E	2144	E	2145	E	2146	E	2147	E	2148	E	2149	E	2150	E	2151	E	2152	E	2153	E	2154	E	2155	E	2156	E	2157	E	2158	E	2159	E	2160	E	2161	E	2162	E	2163	E	2164	E	2165	E	2166	E	2167	E	2168	E	2169	E	2170	E	2171	E	2172	E	2173	E	2174	E	2175	E	2176	E	2177	E	2178	E	2179	E	2180	E	2181	E	2182	E	2183	E	2184	E	2185	E	2186	E	2187	E	2188	E	2189	E	2190	E	2191	E	2192	E	2193	E	2194	E	2195	E	2196	E	2197	E	2198	E	2199	E	2200	E	2201	E	2202	E	2203	E	2204	E	2205	E	2206	E	2207	E	2208	E	2209	E	2210	E	2211	E	2212	E	2213	E	2214	E	2215	E	2216	E	2217	E	2218	E	2219	E	2220	E	2221	E	2222	E	2223	E	2224	E	2225	E	2226	E	2227	E	2228	E	2229	E	2230	E	2231	E	2232	E	2233	E	2234	E	2235	E	2236	E	2237	E	2238	E	2239	E	2240	E	2241	E	2242	E	2243	E	2244	E	2245	E	2246	E	2247	E	2248	E	2249	E	2250	E	2251	E	2252	E	2253	E	2254	E	2255	E	2256	E	2257	E	2258	E	2259	E	2260	E	2261	E	2262	E	2263	E	2264	E	2265	E	2266	E	2267	E	2268	E	2269	E	2270	E	2271	E	2272	E	2273	E	2274	E	2275	E	2276	E	2277	E	2278	E	2279	E	2280	E</
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3002 C 10	3484 D 11	2403 D 3	0002 A 9
3003 C 10	3485 D 11	2404 E 3	0003 A 9
3004 E 7	3486 E 3	2405 F 8	0004 A 9
3005 F 7	3487 E 4	2406 C 13	0005 D 7
3006 F 7	3488 E 3	2407 E 1	1401 A 1
3007 C 0	3489 E 2	2408 C 1	1402 C 1
3008 B 5	3490 E 2	2409 H 0	1404 B 1
5401 B 7	3491 F 8	2478 I 0	1405 D 1
5402 B 5	3492 F 7	2471 H 8	1406 E 8
5405 E 3	3493 E 7	2472 I 8	1407 H 9
0401 D 2	3494 E 7	2473 I 0	1408 T 8
0402 C 3	3495 E 8	2475 A 2	1409 T 5
0403 D 3	3496 E 8	2476 F 12	1410 T 6
0404 C 3	3497 E 8	2477 I 10	1411 A 4
0405 D 4	3498 E 6	2502 E 5	1413 F 9
0400 C 2	3499 B 8	2503 D 5	1414 F 1
0407 D 3	3500 A 4	2504 B 6	1415 A 5
0408 C 3	3501 C 0	2505 A 11	1416 B 0
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0422 C 11	3531 A 3	2557 D 13	1431 I 12
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0442 D 2	3538 B 4	3486 C 1	1438 F 2
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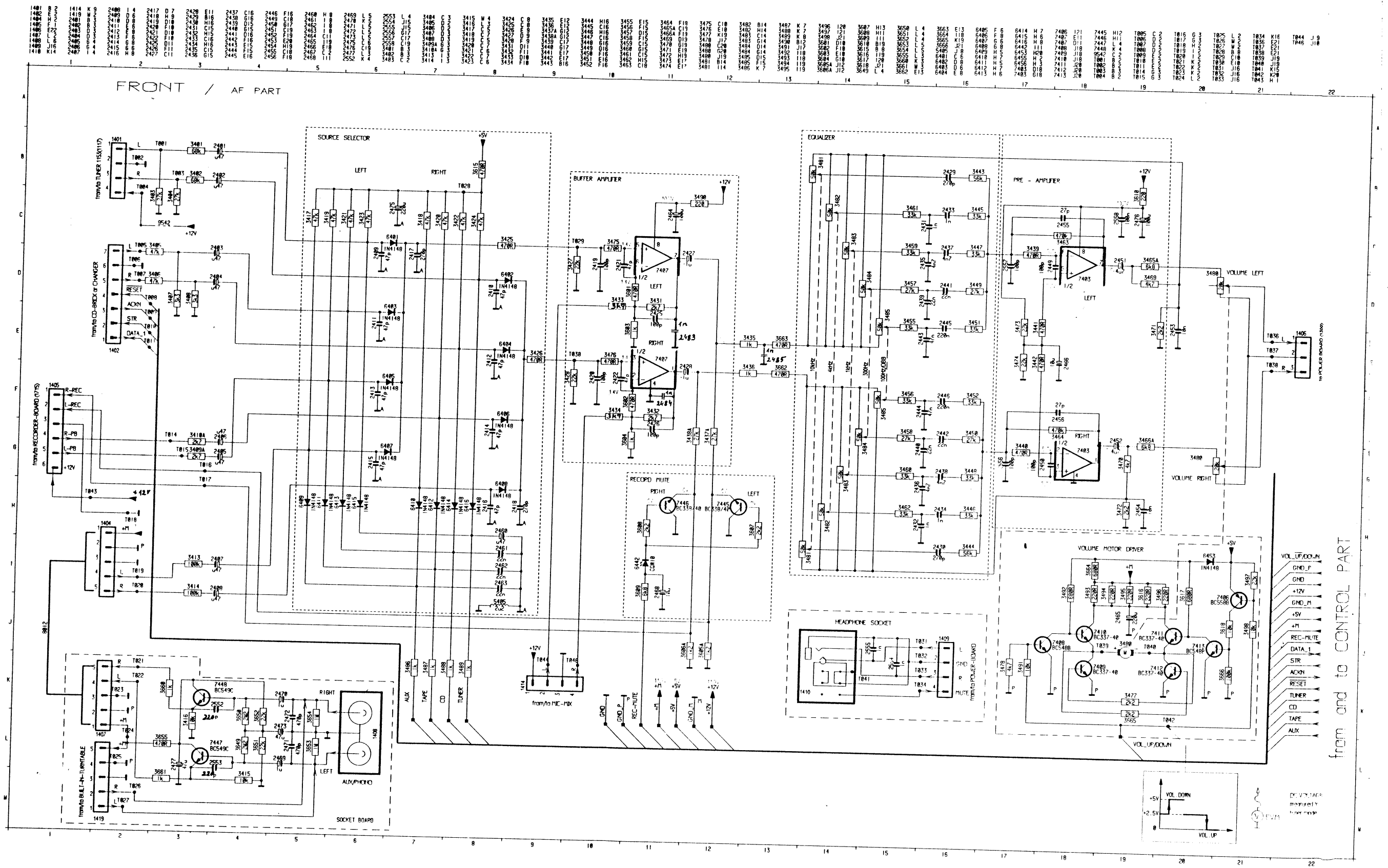
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2407 D 2	3428 F 2	3576 F 11	7426 A 11
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24-NEW

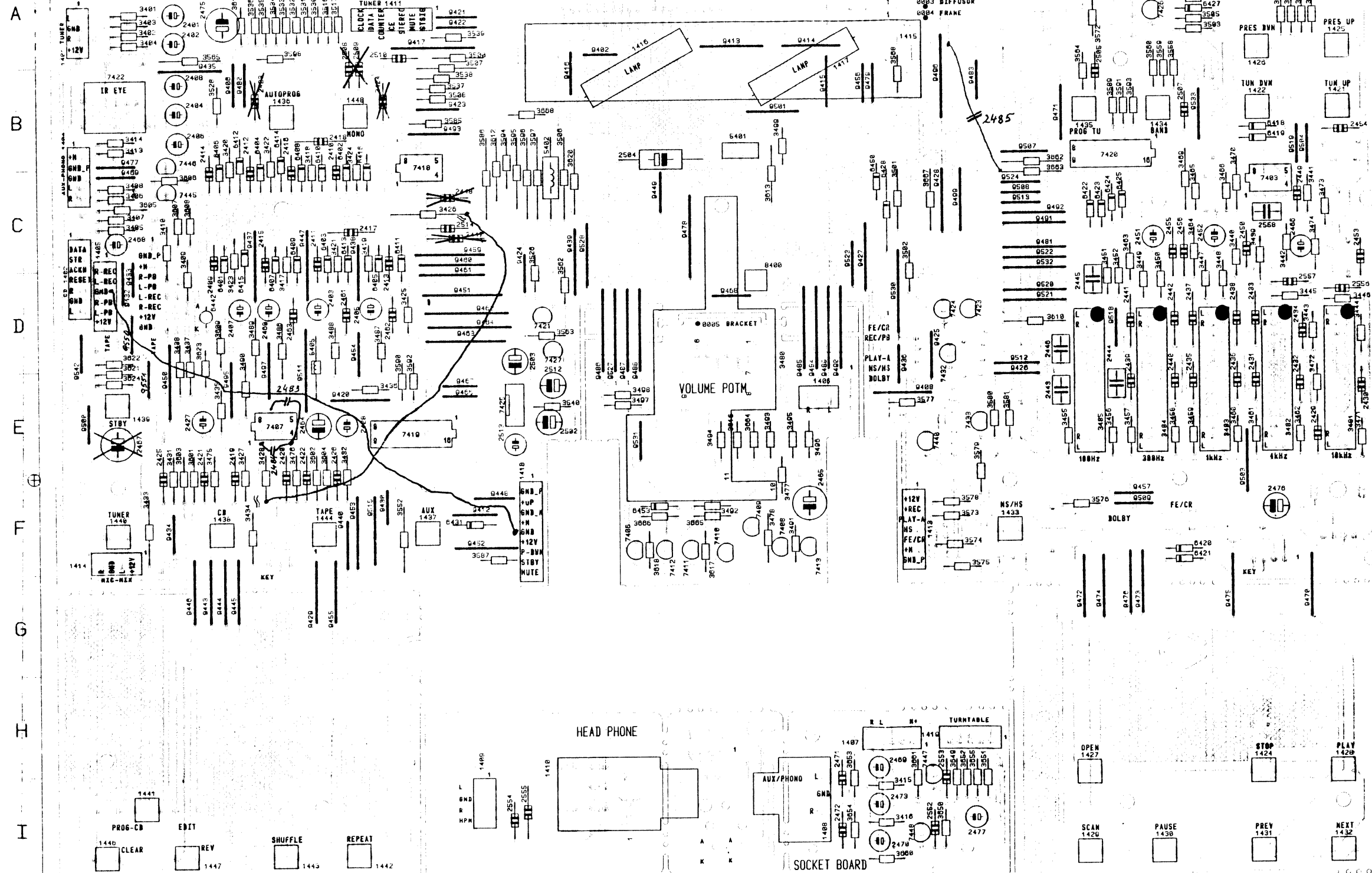
This is a detailed electronic schematic diagram for a portable cassette player. The diagram is organized into several functional sections:

- Top Section:** Includes the **TURNTABLE** and **HEAD PHONE** connections. It features a **SOCKET BOARD** with various components like 3551, 3552, 3553, 3554, 3555, 3556, 3557, 3558, 3559, 3560, 3561, 3562, 3563, 3564, 3565, 3566, 3567, 3568, 3569, 3570, 3571, 3572, 3573, 3574, 3575, 3576, 3577, 3578, 3579, 3580, 3581, 3582, 3583, 3584, 3585, 3586, 3587, 3588, 3589, 3590, 3591, 3592, 3593, 3594, 3595, 3596, 3597, 3598, 3599, 3600, 3601, 3602, 3603, 3604, 3605, 3606, 3607, 3608, 3609, 3610, 3611, 3612, 3613, 3614, 3615, 3616, 3617, 3618, 3619, 3620, 3621, 3622, 3623, 3624, 3625, 3626, 3627, 3628, 3629, 3630, 3631, 3632, 3633, 3634, 3635, 3636, 3637, 3638, 3639, 3640, 3641, 3642, 3643, 3644, 3645, 3646, 3647, 3648, 3649, 3650, 3651, 3652, 3653, 3654, 3655, 3656, 3657, 3658, 3659, 3660, 3661, 3662, 3663, 3664, 3665, 3666, 3667, 3668, 3669, 3670, 3671, 3672, 3673, 3674, 3675, 3676, 3677, 3678, 3679, 3680, 3681, 3682, 3683, 3684, 3685, 3686, 3687, 3688, 3689, 3690, 3691, 3692, 3693, 3694, 3695, 3696, 3697, 3698, 3699, 3700, 3701, 3702, 3703, 3704, 3705, 3706, 3707, 3708, 3709, 3710, 3711, 3712, 3713, 3714, 3715, 3716, 3717, 3718, 3719, 3720, 3721, 3722, 3723, 3724, 3725, 3726, 3727, 3728, 3729, 3730, 3731, 3732, 3733, 3734, 3735, 3736, 3737, 3738, 3739, 3740, 3741, 3742, 3743, 3744, 3745, 3746, 3747, 3748, 3749, 3750, 3751, 3752, 3753, 3754, 3755, 3756, 3757, 3758, 3759, 3760, 3761, 3762, 3763, 3764, 3765, 3766, 3767, 3768, 3769, 3770, 3771, 3772, 3773, 3774, 3775, 3776, 3777, 3778, 3779, 3780, 3781, 3782, 3783, 3784, 3785, 3786, 3787, 3788, 3789, 3790, 3791, 3792, 3793, 3794, 3795, 3796, 3797, 3798, 3799, 3800, 3801, 3802, 3803, 3804, 3805, 3806, 3807, 3808, 3809, 3810, 3811, 3812, 3813, 3814, 3815, 3816, 3817, 3818, 3819, 3820, 3821, 3822, 3823, 3824, 3825, 3826, 3827, 3828, 3829, 3830, 3831, 3832, 3833, 3834, 3835, 3836, 3837, 3838, 3839, 3840, 3841, 3842, 3843, 3844, 3845, 3846, 3847, 3848, 3849, 3850, 3851, 3852, 3853, 3854, 3855, 3856, 3857, 3858, 3859, 3860, 3861, 3862, 3863, 3864, 3865, 3866, 3867, 3868, 3869, 3870, 3871, 3872, 3873, 3874, 3875, 3876, 3877, 3878, 3879, 3880, 3881, 3882, 3883, 3884, 3885, 3886, 3887, 3888, 3889, 3890, 3891, 3892, 3893, 3894, 3895, 3896, 3897, 3898, 3899, 3900, 3901, 3902, 3903, 3904, 3905, 3906, 3907, 3908, 3909, 3910, 3911, 3912, 3913, 3914, 3915, 3916, 3917, 3918, 3919, 3920, 3921, 3922, 3923, 3924, 3925, 3926, 3927, 3928, 3929, 3930, 3931, 3932, 3933, 3934, 3935, 3936, 3937, 3938, 3939, 3940, 3941, 3942, 3943, 3944, 3945, 3946, 3947, 3948, 3949, 3950, 3951, 3952, 3953, 3954, 3955, 3956, 3957, 3958, 3959, 3960, 3961, 3962, 3963, 3964, 3965, 3966, 3967, 3968, 3969, 3970, 3971, 3972, 3973, 3974, 3975, 3976, 3977, 3978, 3979, 3980, 3981, 3982, 3983, 3984, 3985, 3986, 3987, 3988, 3989, 3990, 3991, 3992, 3993, 3994, 3995, 3996, 3997, 3998, 3999, 4000.
- Left Section:** Contains the **TURNTABLE** and **HEAD PHONE** connections. It includes a **SOCKET BOARD** with various components like 3551, 3552, 3553, 3554, 3555, 3556, 3557, 3558, 3559, 3560, 3561, 3562, 3563, 3564, 3565, 3566, 3567, 3568, 3569, 3570, 3571, 3572, 3573, 3574, 3575, 3576, 3577, 3578, 3579, 3580, 3581, 3582, 3583, 3584, 3585, 3586, 3587, 3588, 3589, 3590, 3591, 3592, 3593, 3594, 3595, 3596, 3597, 3598, 3599, 3600, 3601, 3602, 3603, 3604, 3605, 3606, 3607, 3608, 3609, 3610, 3611, 3612, 3613, 3614, 3615, 3616, 3617, 3618, 3619, 3620, 3621, 3622, 3623, 3624, 3625, 3626, 3627, 3628, 3629, 3630, 3631, 3632, 3633, 3634, 3635, 3636, 3637, 3638, 3639, 3640, 3641, 3642, 3643, 3644, 3645, 3646, 3647, 3648, 3649, 3650, 3651, 3652, 3653, 3654, 3655, 3656, 3657, 3658, 3659, 3660, 3661, 3662, 3663, 3664, 3665, 3666, 3667, 3668, 3669, 3670, 3671, 3672, 3673, 3674, 3675, 3676, 3677, 3678, 3679, 3680, 3681, 3682, 3683, 3684, 3685, 3686, 3687, 3688, 3689, 3690, 3691, 3692, 3693, 3694, 3695, 3696, 3697, 3698, 3699, 3700, 3701, 3702, 3703, 3704, 3705, 3706, 3707, 3708, 3709, 3710, 3711, 3712, 3713, 3714, 3715, 3716, 3717, 3718, 3719, 3720, 3721, 3722, 3723, 3724, 3725, 3726, 3727, 3728, 3729, 3730, 3731, 3732, 3733, 3734, 3735, 3736, 3737, 3738, 3739, 3740, 3741, 3742, 3743, 3744, 3745, 3746, 3747, 3748, 3749, 3750, 3751, 3752, 3753, 3754, 3755, 375

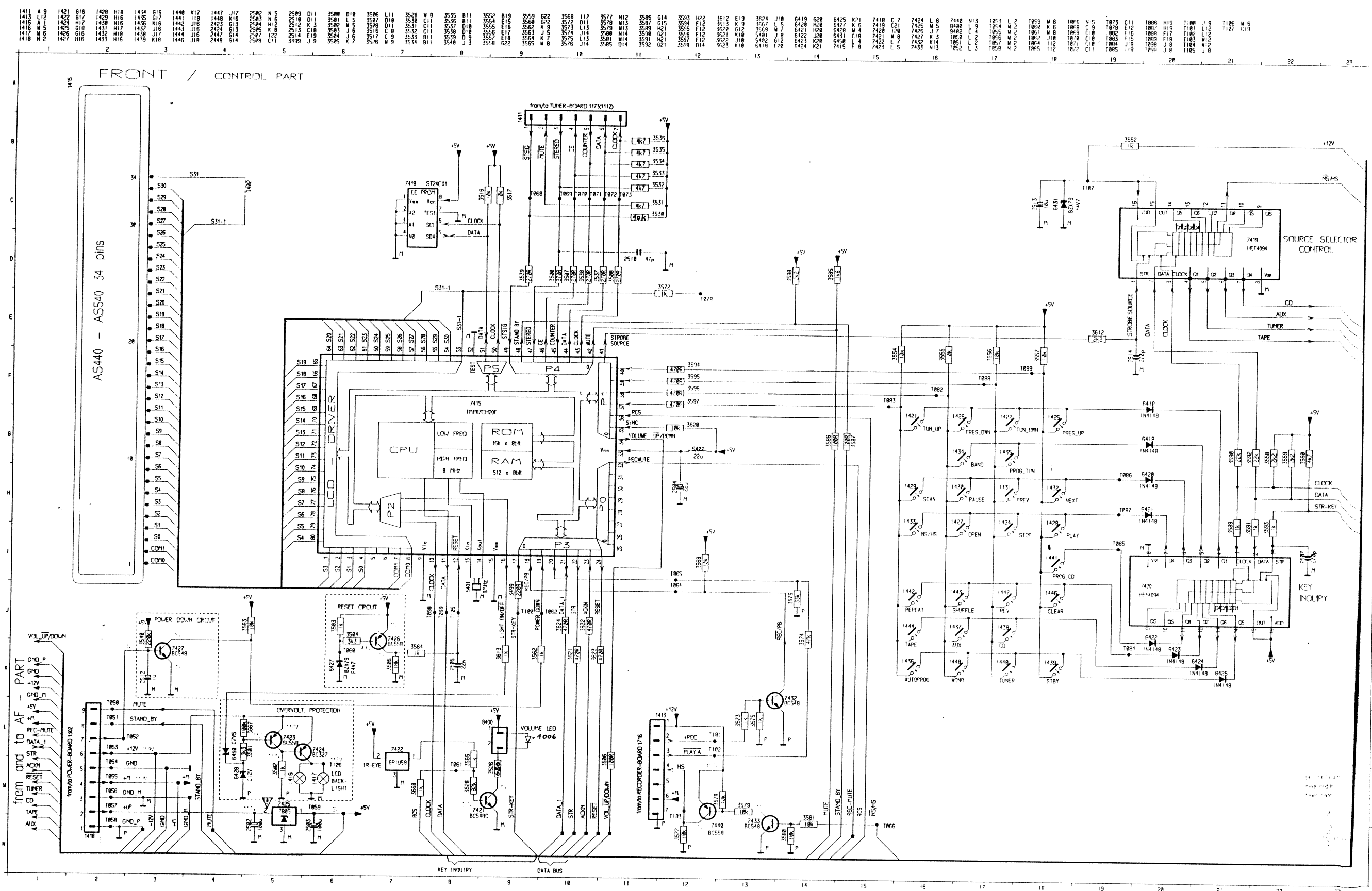
SOCKET BOARD

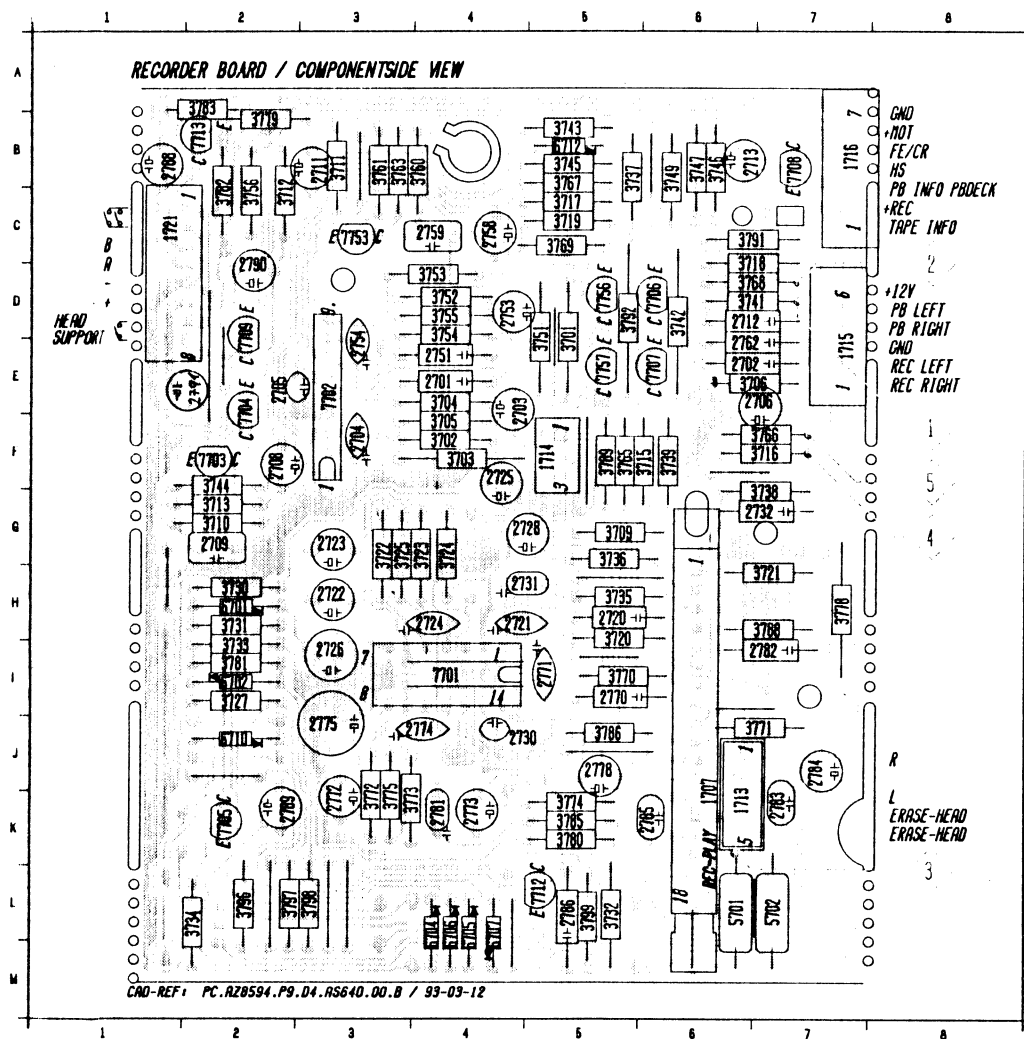


## FRONT / component side view



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0005 D	7	2406 C	13	3487 E	4	3005 F	7
1401 A	1	2407 E	1	3488 E	3	3006 F	7
1402 C	1	2408 C	1	3489 E	2	3007 C	9
1403 C	1	2409 H	6	3490 E	2	3008 B	5
1404 C	1	2410 I	6	3491 F	8	3401 B	7
1405 E	8	2411 H	6	3492 F	7	3402 B	5
1406 H	0	2412 I	8	3493 E	7	3403 E	3
1407 H	0	2413 I	8	3494 E	7	3404 D	2
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1486 A	2	2492 A	1	3573 A	12	3483 B	4
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1488 A	2	2494 A	1	3575 A	12	3485 B	4
1489 A	2	2495 A	1	3576 A	12	3486 B	4
1490 A	2	2496 A	1	3577 A	12	3487 B	4
1491 A	2	2497 A	1	3578 A	12	3488 B	4
1492 A	2	2498 A	1	3579 A	12	3489 B	4
1493 A	2	2499 A	1	3580 A	12	3490 B	4
1494 A	2	2500 A	1	3581 A	12	3491 B	4
1495 A	2	2501 A	1	3582 A	12	3492 B	4
1496 A	2	2502 A	1	3583 A	12	3493 B	4
1497 A	2	2503 A	1	3584 A	12	3494 B	4
1498 A	2	2504 A	1	3585 A	12	3495 B	4
1499 A	2	2505 A	1	3586 A	12	3496 B	4
1500 A	2	2506 A	1	3587 A	12	3497 B	4





1707 J6	3711 B3	3783 A2
1713 K6	3712 C2	3785 K5
1714 F5	3713 G2	3786 J5
1715 E7	3715 F6	3788 H7
1716 B7	3716 F7	3789 F5
1721 C1	3717 C5	3791 C6
2701 E4	3718 06	3792 05
2702 E6	3719 C5	3796 L2
2703 E4	3720 H5	3797 L2
2704 F3	3721 H7	3798 L3
2705 E2	3722 G3	3799 L5
2706 E7	3723 G4	5701 L6
2708 F2	3724 G4	5702 L7
2709 G2	3725 G3	6701 H2
2711 B3	3727 I2	6702 I2
2712 06	3730 H2	6704 L4
2713 B6	3731 H2	6705 L4
2720 H5	3732 L5	6706 L4
2721 H4	3733 I2	6707 L4
2722 H3	3734 L2	6710 J2
2723 G3	3735 H5	6712 B5
2724 H4	3736 G5	7701 I4
2725 F4	3737 B5	7702 E3
2726 I3	3738 G7	7703 F2
2728 G5	3739 F6	7704 E2
2730 J4	3741 06	7705 K2
2731 H5	3742 06	7706 06
2732 G7	3743 B5	7707 E6
2751 E4	3744 F2	7708 B7
2753 D4	3745 B5	7709 02
2754 E3	3746 B6	7712 L5
2758 C4	3747 B6	7713 B2
2759 C4	3749 B6	7753 C3
2762 E6	3751 05	7756 05
2770 I5	3752 04	7757 E5
2771 I5	3753 04	9701 L7
2772 K3	3754 04	9702 L6
2773 K4	3755 04	9705 L4
2774 J4	3756 C2	9706 J2
2775 J3	3760 B4	9707 H1
2778 J5	3761 B3	9708 05
2781 K4	3763 B3	9709 E2
2782 I7	3765 F5	9711 J5
2783 K7	3766 F7	9712 I6
2784 J7	3767 B5	9713 I5
2785 K6	3768 06	9714 I4
2786 L5	3769 C5	9715 I4
2788 B1	3770 I5	9716 H5
2789 K2	3771 J7	9717 B3
2790 02	3772 K3	9722 F5
3701 05	3773 K3	9723 F6
3702 F4	3774 K5	9727 L3
3703 F4	3775 K3	9731 E2
3704 E4	3778 H7	9732 L2
3705 F4	3779 B2	9733 L3
3706 E6	3780 K5	9741 B6
3709 G5	3781 I2	2741 E4
3710 02	3782 C2	

## RECORDER ADJUSTMENT TABLE

Adjustment	Cassette/Source	Recorder mode	Measure on	Read on	Adjust	
					with	to
Azimuth <sup>1)</sup>	SBC 420 8kHz	PLAY A-Deck PLAY B-Deck	1 2 or Phone socket	mV - meter	left-hand screw	maximum output left = right
Motor speed <sup>2)</sup>						
Normal speed	SBC 420	PLAY A + B-Deck HS-Dubbing	1 2 or Phone socket	Wow and Flutter meter or Counter	pot on motor	0±1%
High speed <sup>4)</sup>	3150Hz			Counter	check only	5556-5783Hz

## CHECK ONLY

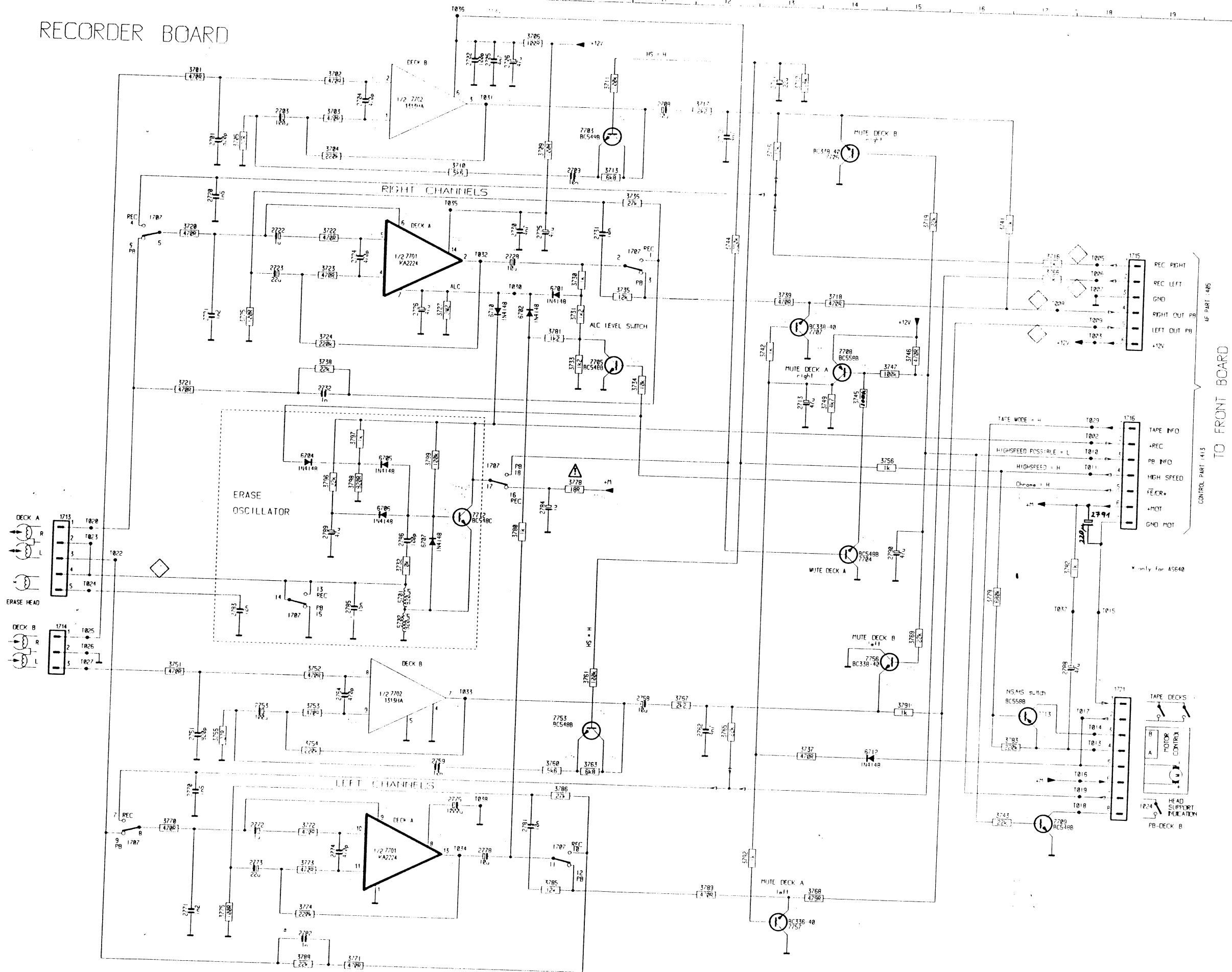
Check	Cassette/Source	Recorder mode	Measure on	Read on	Check if
Wow and Flutter	SBC 420 3150Hz	PLAY A or B-Deck PLAY A and B-Deck	1 2 or Phone socket	Wow and Flutter meter	≤ 0,3% weighted ≤ 0,35% weighted
Erase Oscillator					
Voltage	any	REC A-deck	3 Erase head	mV - meter Counter	Cr ≥ 9,8Vrms Fe ≥ 20,8 Vrms
Frequency					f = 60kHz ± 5kHz
Playback level <sup>3)</sup>	SBC420 315Hz 0dB level	PLAY A-Deck <sup>5)</sup> PLAY B-Deck <sup>5)</sup>	1 2	mV - meter	41 mV - 57 mV 41 mV - 57 mV
Frequency response Playback	SBC420	PLAY A or B-Deck <sup>5)</sup>	1 2	mV - meter	125 Hz - 10 kHz within 8dB
Overall	Level = 0,5mV 4 5	REC A-Deck <sup>5)</sup> PLAY A-Deck <sup>5)</sup>	1 2	mV - meter	125 Hz - 10 kHz within 8dB 125 Hz - 8 kHz dubbing
Distortion	SBC 420 Level = 10mV 4 5	REC A-Deck <sup>5)</sup> PLAY A-Deck <sup>5)</sup>	1 2	mV - meter	50 mV ± 10 mV, D ≤ 5%

SBC 420 Service code: 4822 397 30071

- 1) For Azimuth adjustment set need not to be dismantled. Remove ornamental part of cassette door and put screwdriver (torx5) through holes of cassette door.
- 2) Absolute difference between deck A and deck B have to be ≤2%.
- 3) Noise level in "PAUSE" should be 80 - 180μV (A-weighted).
- 4) Insert SBC420 in A-Deck and use High speed dubbing mode to check frequency.
- 5) Recorder has to be in Fe- Mode



## RECORDER BOARD



TO FRONT BOARD

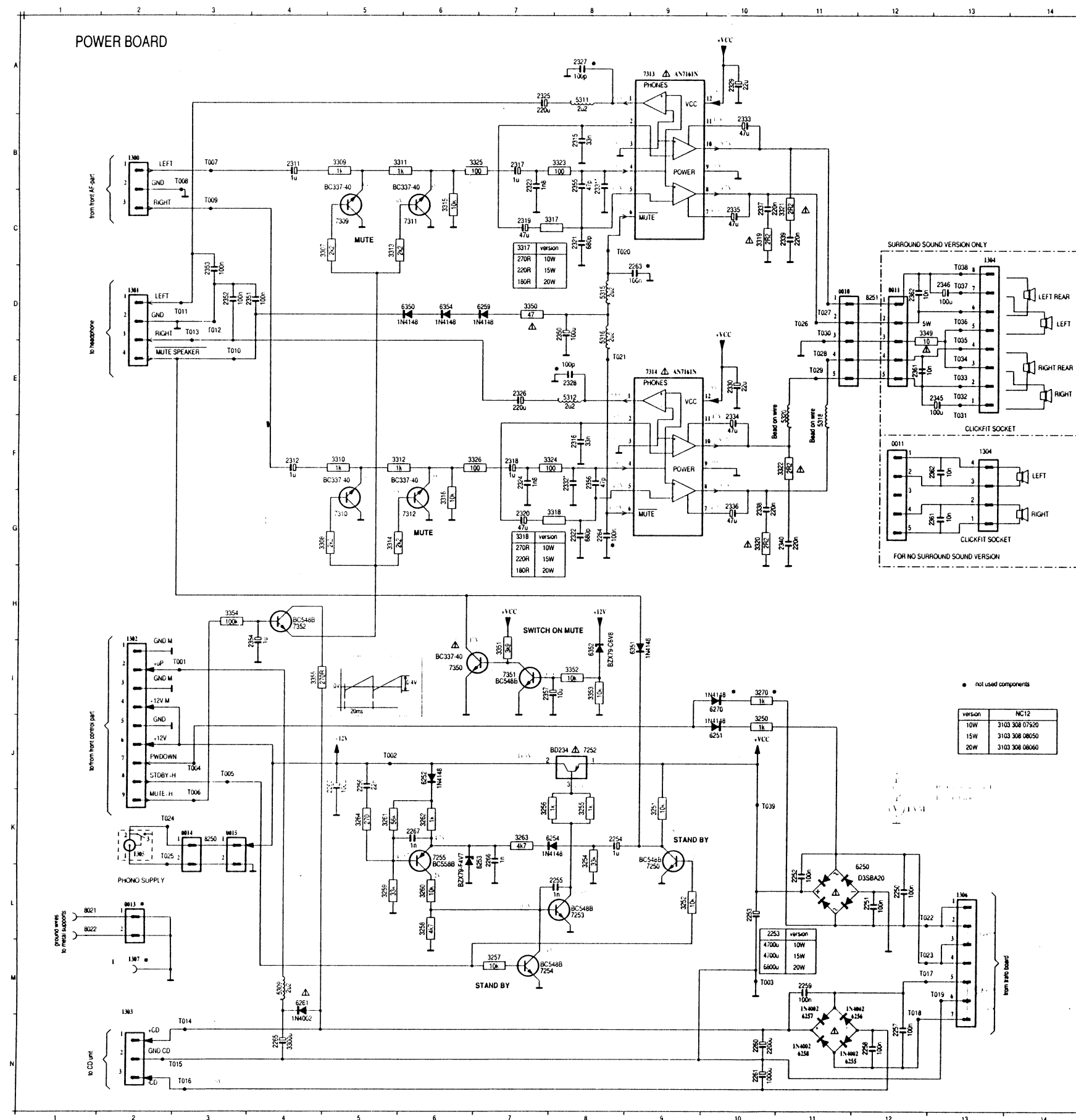
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1707 970  
1707 971  
1



## TRANSFORMER BOARD

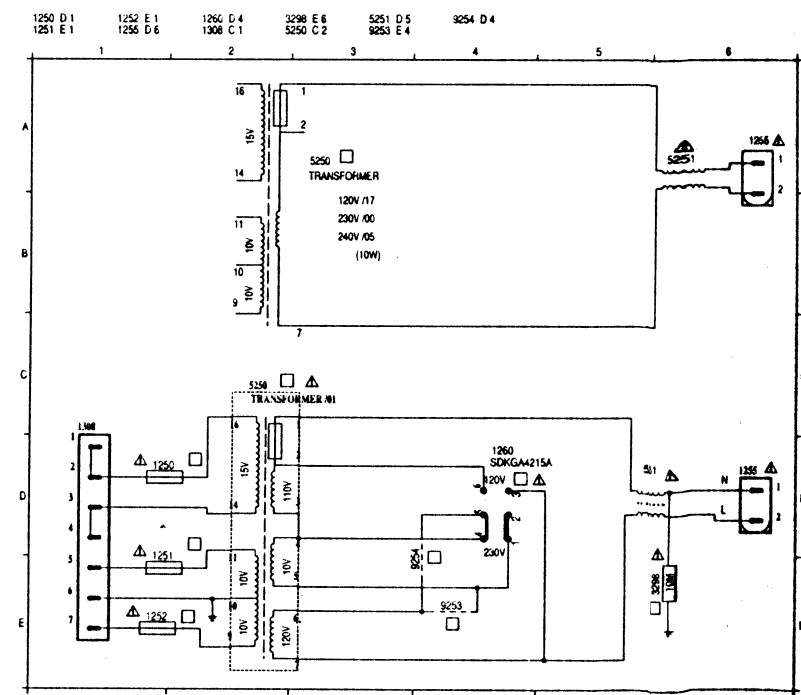


0010 D11  
0011 D12  
0012 L2  
0013 L3  
0014 K3  
0015 K3  
1300 B2  
1301 D2  
1302 L2  
1303 M2  
1304 C13  
1305 K2  
1306 L13  
1307 M2  
1308 M2  
2250 L12  
2251 L12  
2252 L11  
2253 L10  
2254 K8  
2255 L8  
2256 J5  
2257 N12  
2258 N12  
2259 M11  
2260 N10  
2261 N10  
2262 J5  
2263 D9  
2264 G8  
2265 N4  
2266 K7  
2267 K6  
2268 F8  
2269 F8  
2270 F8  
2271 F8  
2272 F8  
2273 F8  
2274 F8  
2275 F8  
2276 F8  
2277 F8  
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2299 F8  
2300 F8  
2301 F8  
2302 F8  
2303 F8  
2304 F8  
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2311 F8  
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2392 F8  
2393 F8  
2394 F8  
2395 F8  
2396 F8  
2397 F8  
2398 F8  
2399 F8  
2400 F8

## COMPONENTS DEPENDING ON THE VERSION

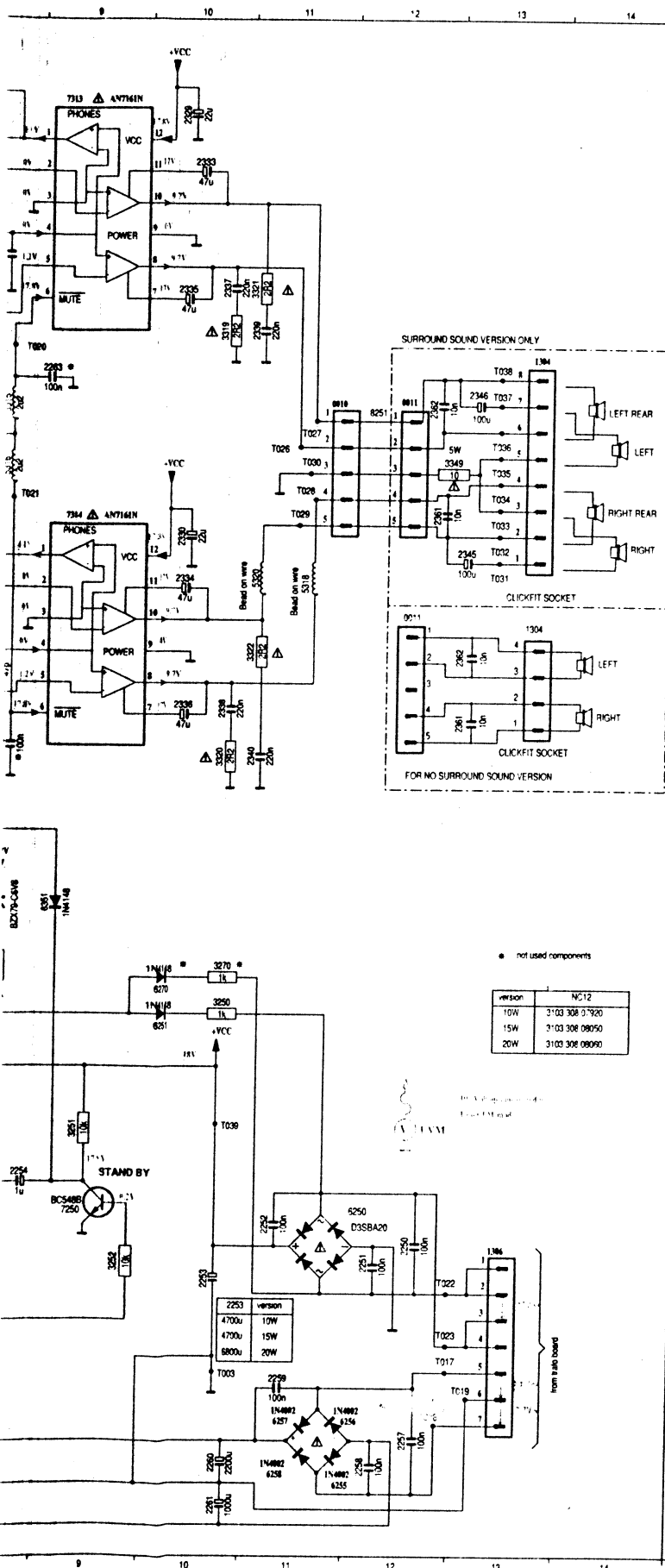
VERSION	COMPONENTS				VALUE OF FUSE		
	1208	1253	1254	1255	1256	1257	1258
/80 (TEC 230V)					5A	0.30mA	0.30mA
/85 (UL 120V)	X				5A	0.30mA	0.30mA
/17 (UL 120V)			X		5A	0.30mA	0.30mA
/81 /18 (120V, 230V)	X	X			5A	0.30mA	0.30mA
/85 (240V)				X	5A	0.30mA	0.30mA

1) for 15W and 20W versions /81 transformer  
for 10W version /85 transformer





## TRANSFORMER BOARD

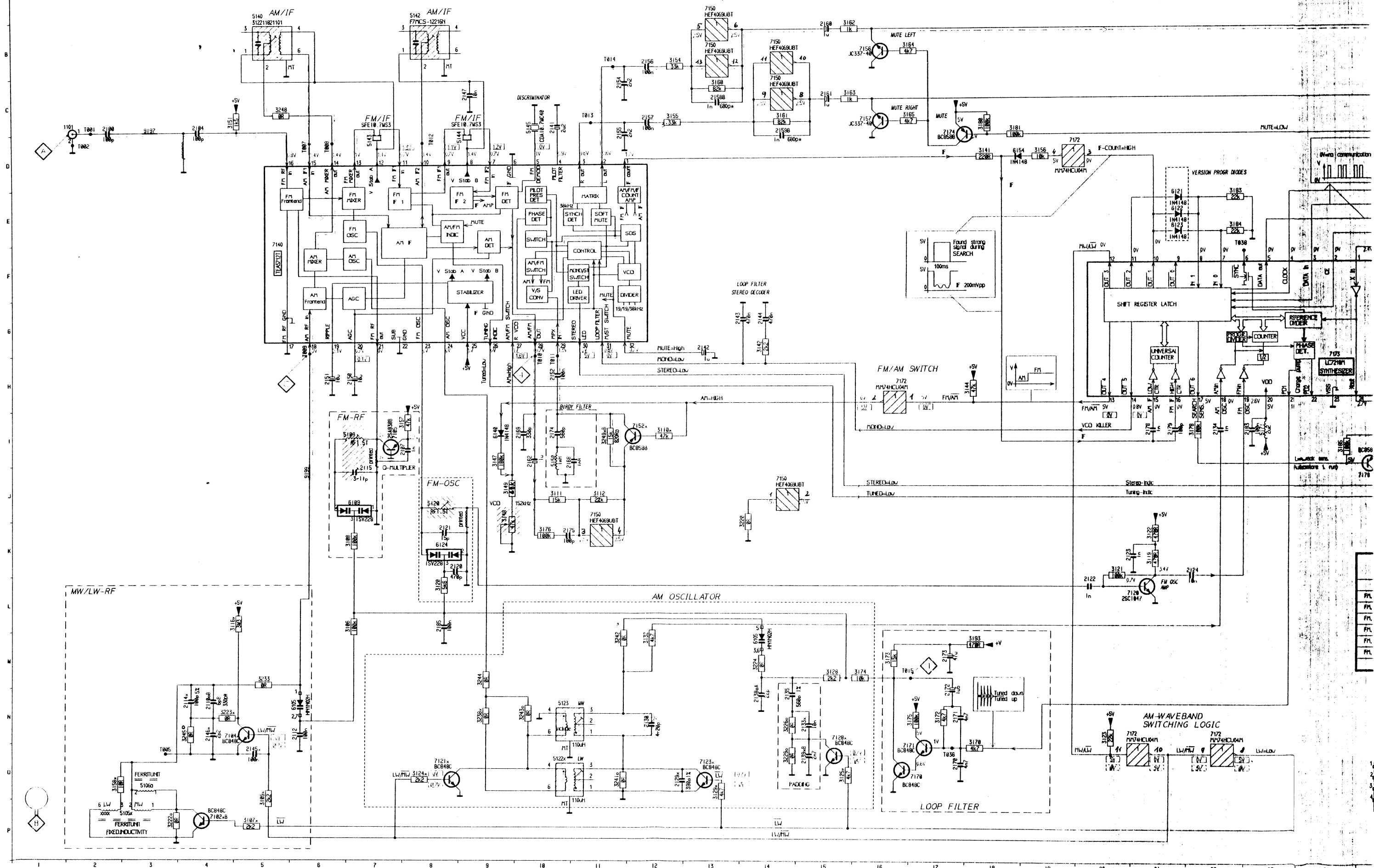


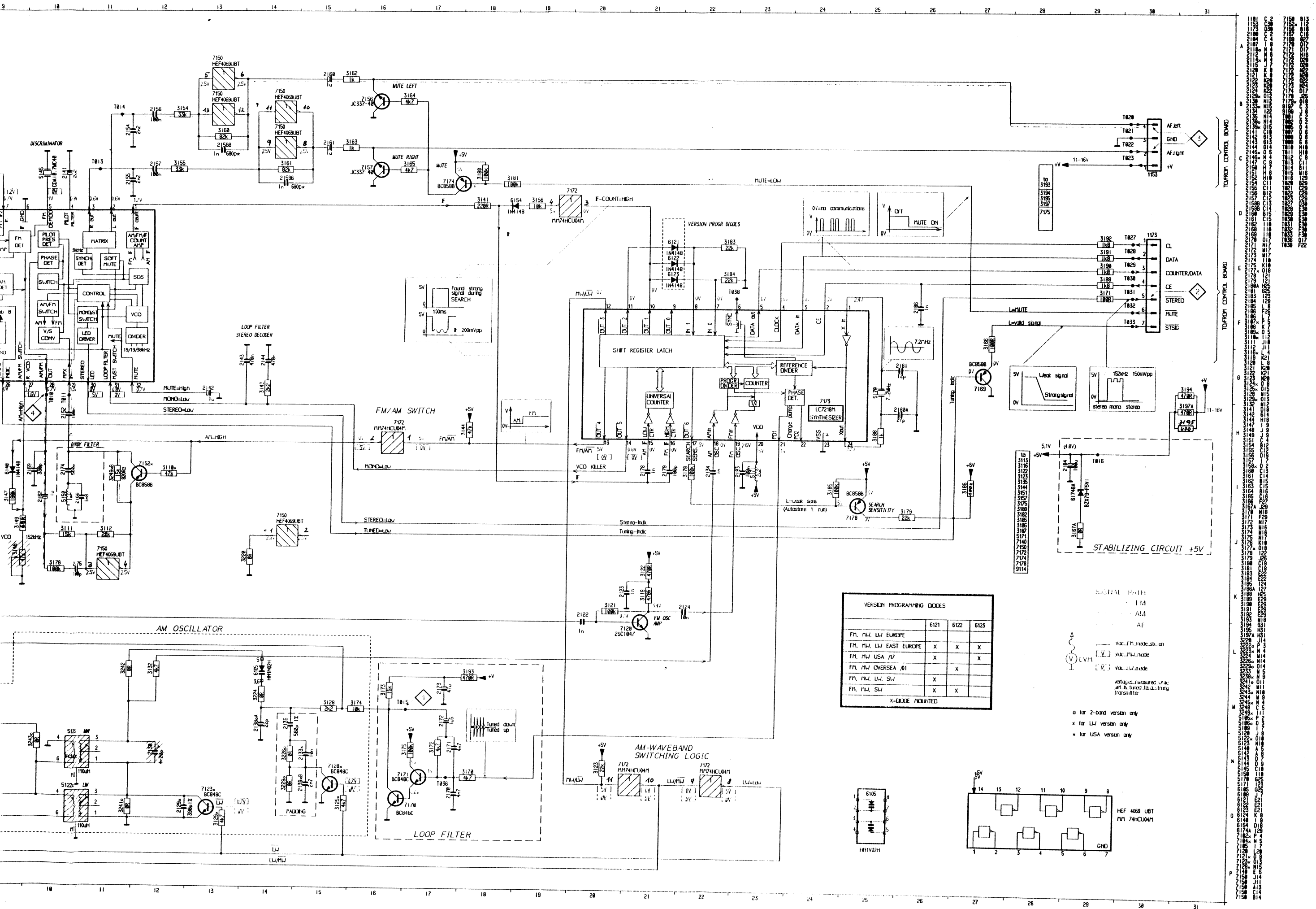
0010 D11	T006 K3
0011 D12	T007 B3
0012 L2	T008 B3
0013 K3	T009 C3
0014 K3	T010 E3
0015 K3	T011 D3
1300 B2	T012 D3
1301 D2	T013 D3
1302 L2	T014 N3
1303 M2	T015 N3
1304 C13	T016 N3
1305 K2	T017 M12
1306 L13	T018 M12
1307 M2	T019 M13
2250 L12	T020 C8
2251 L12	T021 E8
2252 L11	T022 L12
2253 L10	T023 M12
2254 K8	T024 K2
2255 L8	T025 K2
2256 J5	T026 D11
2257 M12	T027 D11
2258 M12	T028 E11
2259 M11	T029 E11
2260 N10	T030 D11
2261 N10	T031 E13
2262 J5	T032 E13
2263 D9	T033 E13
2264 C8	T034 E13
2265 N4	T035 D13
2266 K7	T036 D13
2267 K8	T037 D13
2268 K8	T038 C13
2269 K8	T039 K10

## COMPONENTS DEPENDING ON THE VERSION

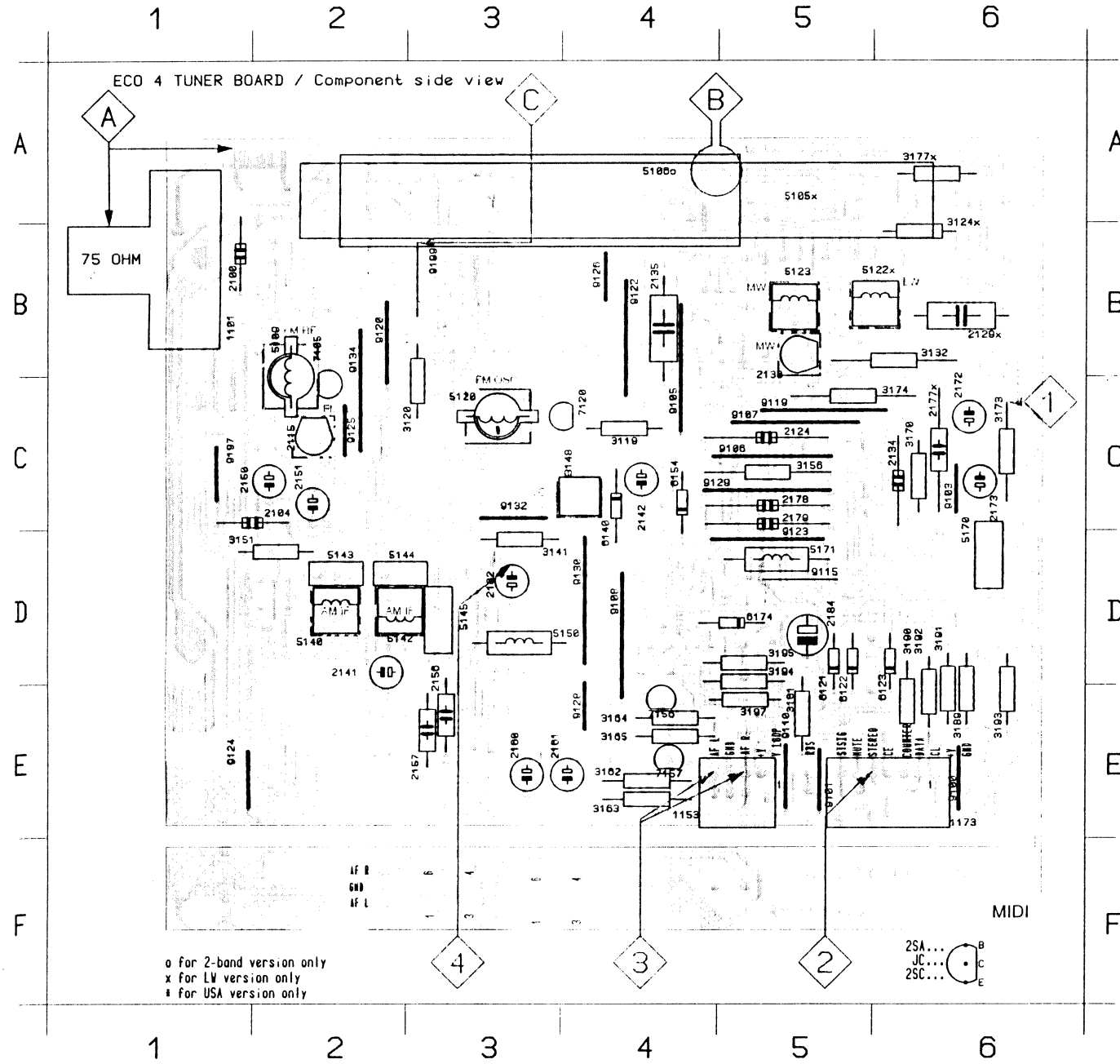
COMPONENTS		VALUE OF FUSE											
VERSION		1200	1251	1252	1253	1254	1255	1256	1257	1258	1259	1260	1261
/00 (IEC 230V)							/00		5A	630mA	630mA	1252	1253
/05 <sup>-11</sup> (240V)		X					/01		5A	630mA	630mA	1254	1255
/17 (UL 120V)							/17	X	6,3A	1,25A	1,25A		
/01 /01 (120V, 230V)		X	X				/81		5A	630mA	630mA		
/05 <sup>-11</sup> (240V)							/85		5A	630mA	630mA		

## TUNER UNIT ECO4 ( MIDI )

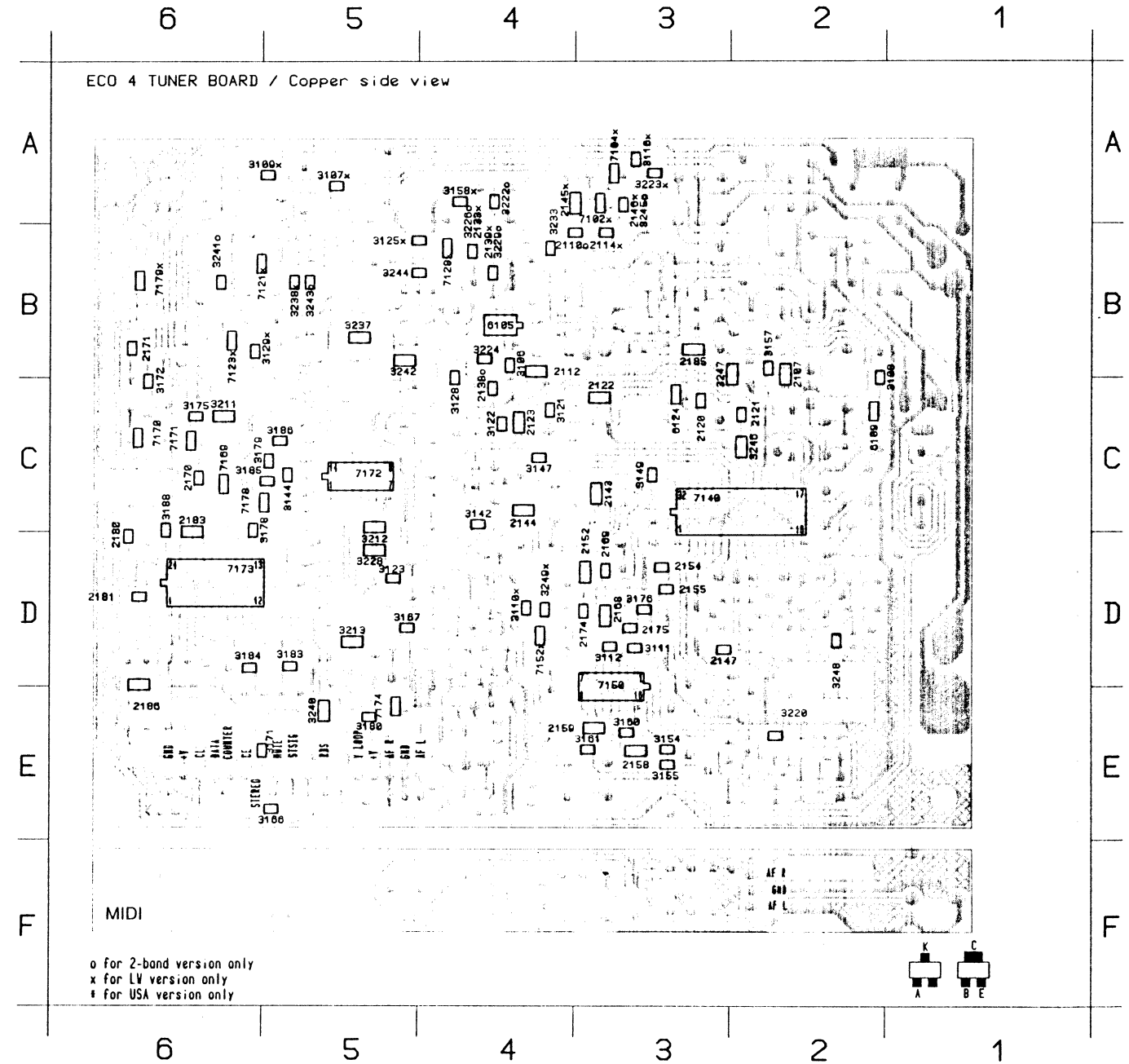




1101 B 1	2134 C 6	2101 E 4	3120 B 3	3164 E 4	3191 D 6	5120 C 3	5170 D 6	7120 C 4	9108 D 4	9128 B 4
1153 E 5	2135 B 4	2102 D 3	3124x B 6	3105 E 4	3192 D 6	5122x B 5	5171 D 5	7150 E 4	9110 E 5	9128 D 4
1173 E 6	2141 D 2	2172 C 6	3132 B 5	3170 C 6	3193 E 6	5123 B 5	5121 D 5	7157 E 4	9115 D 5	9129 C 4
2100 A 1	2142 C 4	2173 C 6	3141 D 3	3173 C 6	3194 D 4	5140 D 2	5122 D 5	7158 E 6	9119 C 5	9130 D 4
2104 C 1	2150 C 2	2177x C 6	3148 C 3	3174 C 5	3195 D 4	5142 D 3	5123 D 6	9101 E 5	9120 C 2	9132 C 3
2115 C 2	2151 C 2	2178 C 4	3151 D 1	3177x A 6	3197 E 4	5143 D 2	5140 D 4	9103 C 6	9122 B 4	9134 B 2
2124 C 4	2156 D 3	2179 C 4	3156 C 4	3181 D 5	5105x A 4	5144 D 2	5154 C 4	9105 C 4	9123 D 4	9107 C 1
2129x B 6	2157 E 3	2184 D 5	3162 E 4	3189 D 6	5106 A 4	5145 D 3	5174 D 4	9106 C 4	9124 E 1	9109 B 3
2130 B 5	2160 E 3	3110 C 4	3163 E 4	3100 D 6	5109 C 2	5150 D 3	7105 C 2	9107 C 5	9125 C 2	



7171 C 6	9109 C 2	3238x B 5	3211 C 6	3171 E 5	3142 C 4	3108 B 2	2169 D 3	2139x B 4	T030 B 6	T010 A 6	T001 B 1
7172 C 5	9124 C 3	3240 E 5	3212 C 5	3172 C 6	3144 C 5	3100x A 5	2170 C 6	2143 C 3	T038 D 6	T020 E 4	T002 B 1
7173 D 6	7102x A 3	3241 D 6	3213 D 5	3175 C 6	3147 C 4	3110x A 4	2171 B 6	2144 C 4	T037 B 2	T021 E 4	T005 E 1
7174 E 5	7104x A 3	3242 B 5	3220 E 2	3176 D 3	3149 C 3	3111 D 3	2174 D 3	2145x A 3	T036 D 3	T022 E 5	T007 D 2
7178 C 5	7121x B 6	3243 B 5	3222 D 4	3178 C 6	3154 E 3	3112 D 3	2175 D 3	2146x A 3	T035 D 3	T023 D 5	T008 D 2
7179x B 6	7123x B 6	3244 B 4	3223x A 3	3179 C 5	3155 E 3	3110x A 3	2180 D 6	2147 D 3	T034 B 3	T024 E 6	T009 B 2
	7128x C 4	3245x A 3	3224 B 4	3180 E 5	3157 B 2	3121 C 4	2181 D 6	2152 D 3	T033 D 3	T025 E 6	T010 D 3
	7140 C 2	3246 C 2	3226 B 4	3183 D 5	3158x A 4	3122 C 4	2183 C 6	2154 D 3	T032 D 3	T026 E 6	T011 C 3
	7150 D 3	3247 B 2	3228 D 5	3184 D 6	3160 E 3	3123 D 5	2185 B 3	2155 D 3	T031 D 3	T027 E 6	T012 D 2
	7152x D 4	3248 D 2	3229 B 4	3185 C 5	3161 E 3	3125x B 4	2186 D 6	2156 E 3	T030 E 6	T028 E 6	T013 E 2
	7169 C 6	3249x D 4	3233 B 4	3186 C 5	3165 E 5	3128 B 4	2187 C 6	2157 E 3	T029 E 6	T029 E 6	T014 D 3
	7170 C 6	9105 B 4	3237 B 5	3188 C 6	3167 D 5	3129x B 6	3107x A 5	2168 D 3	T028 E 6	T030 E 6	T015 C 6



TUNI

VARI

FM /C

87.

FM /1

65.

MW /A

2-band

LW /C

15.

MW /A

522

FM -

FM /C

FM /1

Eas

VCO

FM

AM -

MW

AM -

LW

MW /C

3-t

MW /C

2-t

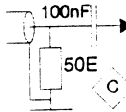
\* Use

1) Adju.

brack

repe:

**TUNER Adjustment table ( ECO 4 FM/MW- and FM/MW/LW - versions with AM-ferrite antenna )**

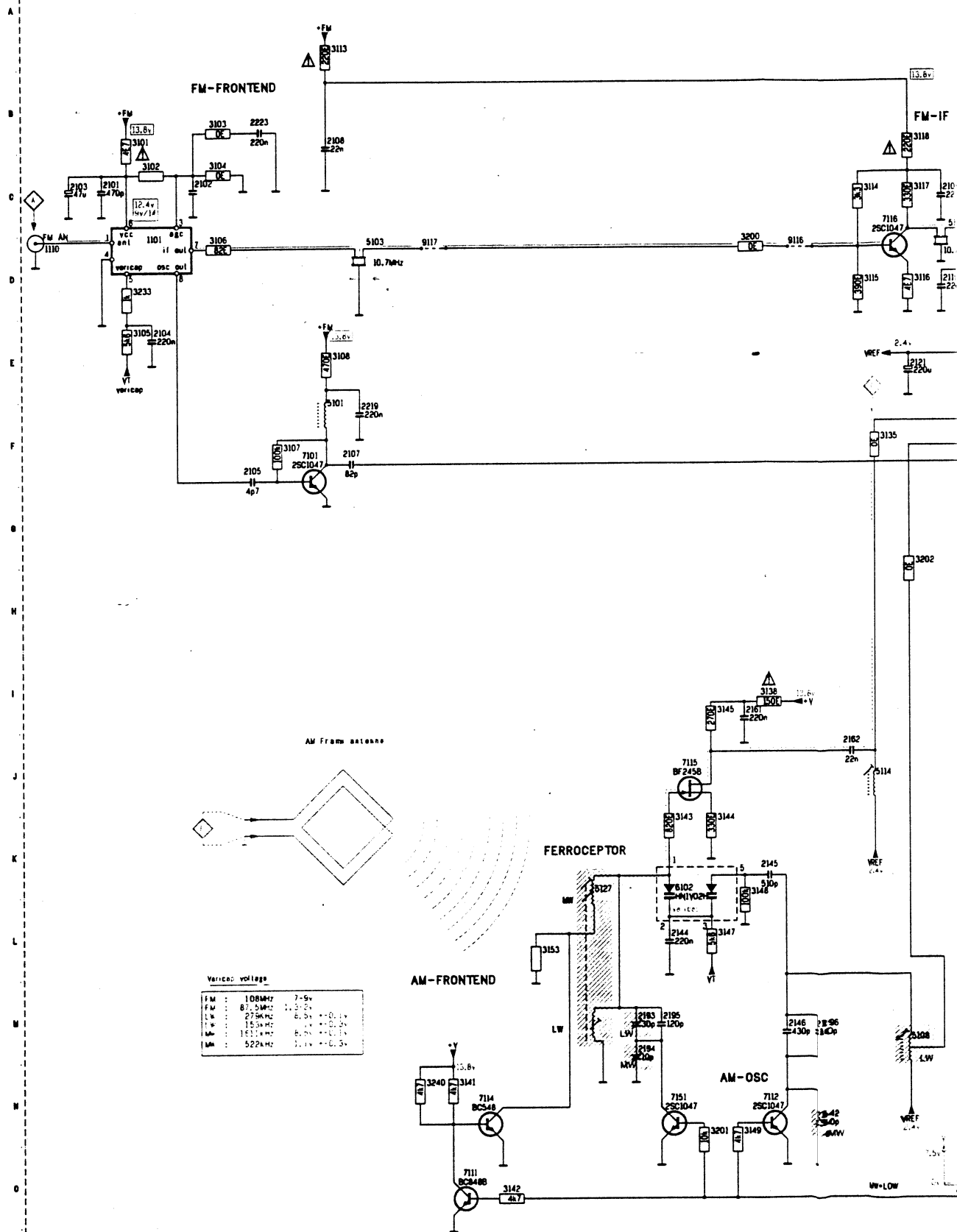
Waverange	Input frequency	Input	Set tuned to	Adjust	Output	Scope / Voltmeter
VARICAP ALIGNMENT * 1)						
FM /00/01/05/10/17 87.5 - 108MHz			108 MHz	5120	1	8V ± 0.2V
			87.5MHz	check		4.1V ± 0.5V
FM /14 East Europe 65.81 - 108MHz			108 MHz	5120		8V ± 0.2V
			65.81 MHz	check		0.8V ± 0.4V
MW /01/17 2-band version, 10kHz grid 530 - 1710kHz			1710kHz	5123		9V±0.1V (7.5±0.7V) <sup>1)</sup>
			530kHz	check		1V±0.4V (1.1±0.5V) <sup>1)</sup>
LW /00/05/10/14 153 - 279kHz			279kHz	5122		8V±0.2V (7.5±1.5V) <sup>1)</sup>
			153kHz	check		1V±0.4V (1.1±0.5V) <sup>1)</sup>
MW /00/05/10/14 522 - 1611kHz			1611kHz	5123		8V±0.1V (7.5±0.5V) <sup>1)</sup>
			522kHz	check		1V±0.4V (1.1±0.5V) <sup>1)</sup>
FM - RF						
FM /00/01/05/10/17	108MHz	A mod=1kHz Δf=22.5kHz	108MHz	2115	3	MAX ↑ ↓
	87.5MHz		87.5MHz	5109		
FM /14 East Europe	108MHz		108MHz	2115		
	65.81MHz		65.81MHz	5109		
VCO						
FM	98 MHz, 1mV continuous wave	A	98MHz	3148	2	152kHz ± 1kHz
AM - IF						
MW	540kHz Δf = 10kHz as low as possible		540kHz	5142 5140	4	symmetrical and max height
AM - RF						
LW	198kHz	B' mod=1kHz 30% AM	198kHz	5122	4	MAX
MW /00/05/10/14 3-band version	1494kHz		1494kHz	2130		MAX ↑ ↓
	549kHz		549kHz	5123		
MW /01/17 2-band version	1500kHz		1500kHz	2130		
	550kHz		550kHz	5123		

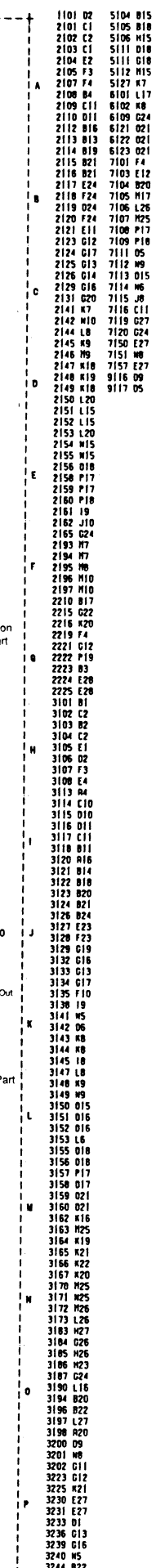
\* Use Service Test Program. By selecting the TUNER TEST, test frequencies will be stored as preset frequ. automatically.

1) Adjustment of AM-RF stage influences the varicap voltage. Therefore check if varicap voltage fulfils value stated within brackets after AM-RF adjustment.

↑ repeat

## TUNER 92



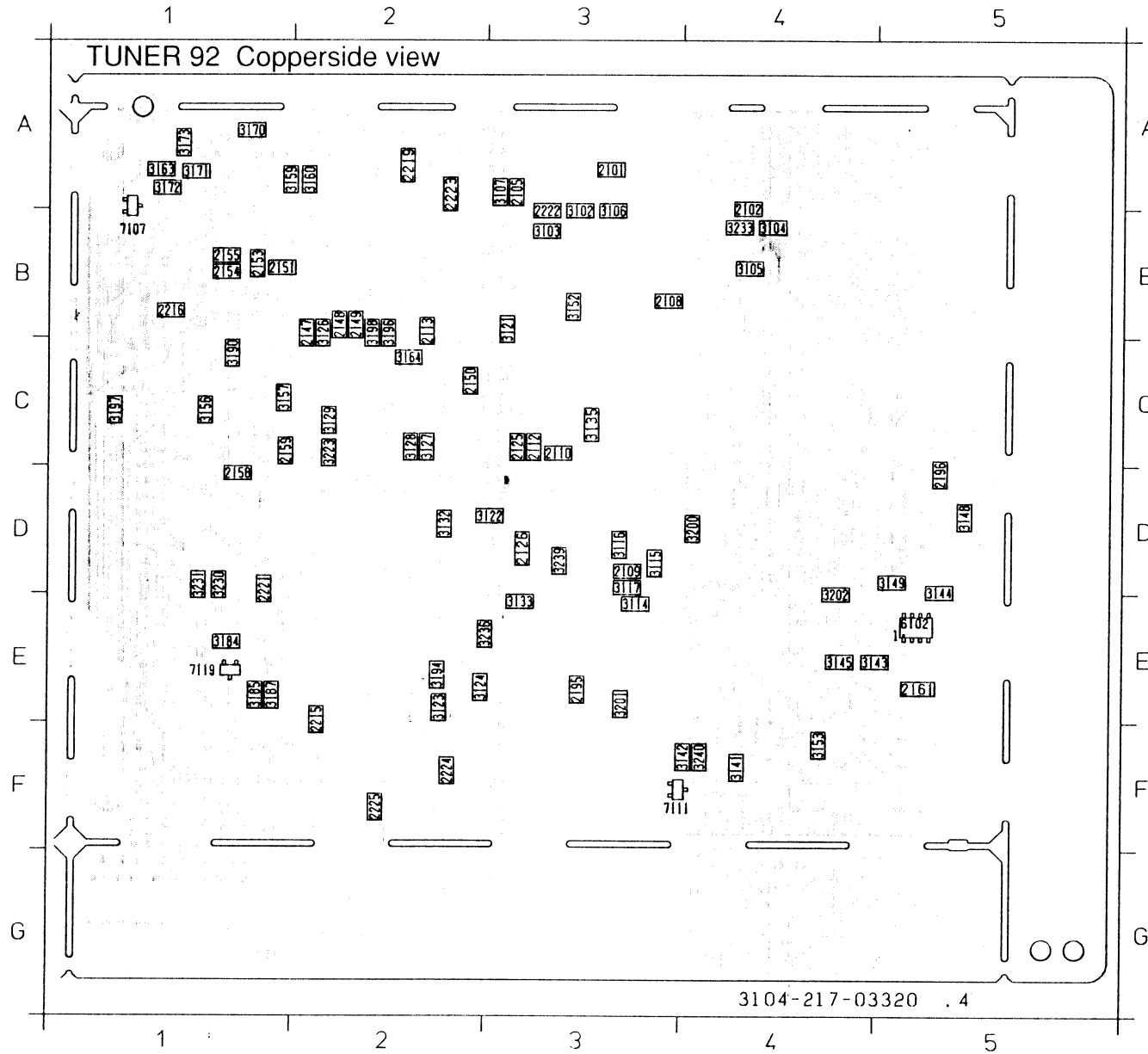


	OPTION DIODES		
	6121	6122	6123
EUROPE	-	-	-
USA	X	X	X
OVERSEAS	X	X	X
EAST EUROPE	X	X	X
JAPAN	-	X	X
EUROPE+SW	X	X	-
OVERSEAS+SW	X	X	-

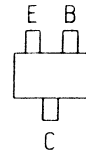
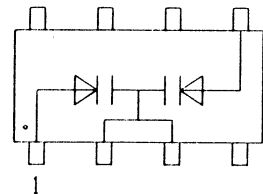
X = DIODE MOUNTED



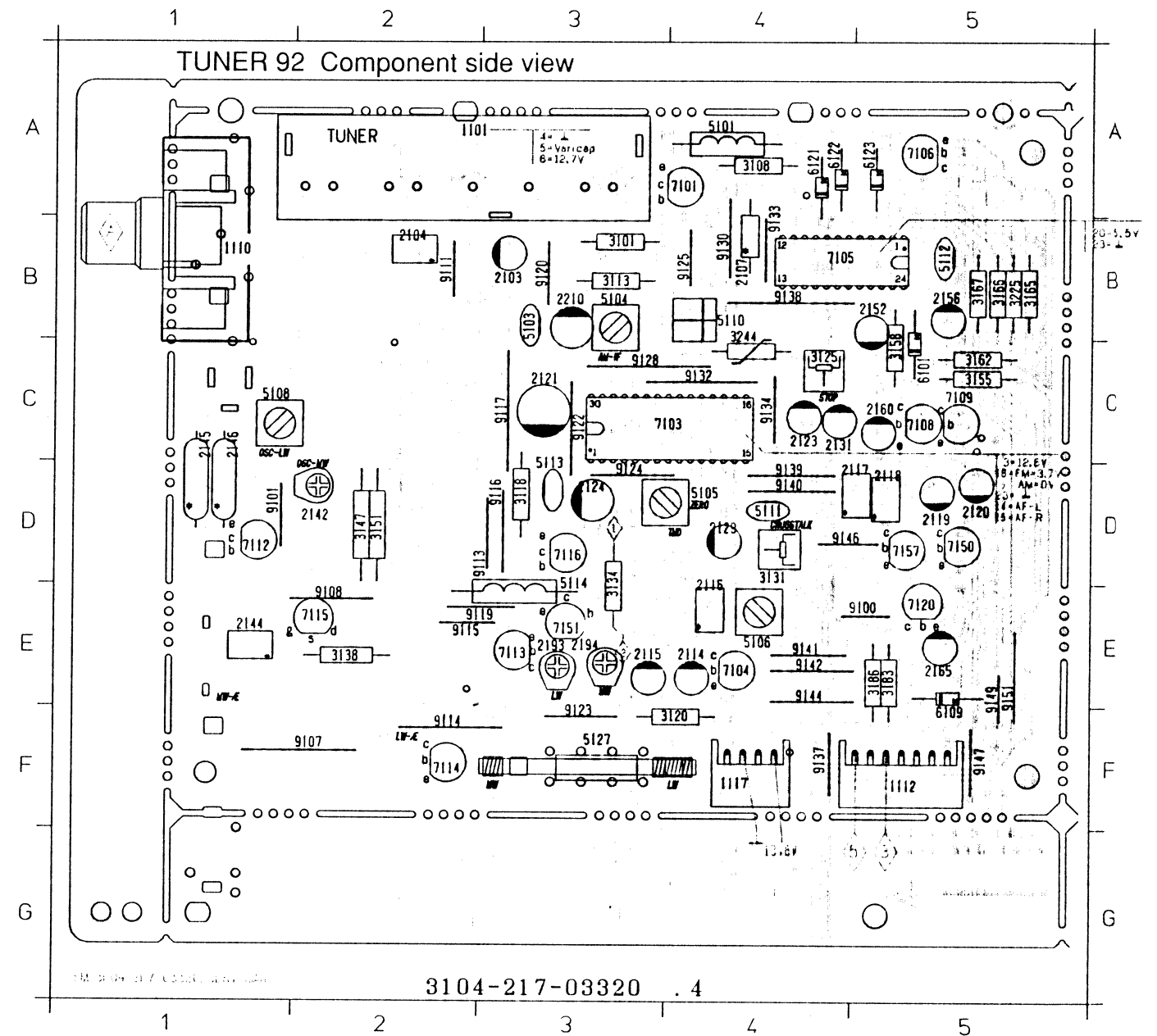
2101 A3	2125 C3	2154 B1	2216 B1	3103 B3	3117 D3	3129 C2	3145 E4	3160 A2	3185 E1	3201 E3	3240 F4
2102 B4	2126 D3	2155 B1	2219 A2	3104 B4	3121 B3	3132 D2	3148 D5	3163 A1	3187 E1	3202 E4	6102 E5
2105 A3	2147 B2	2158 C1	2221 D1	3105 B4	3122 D3	3133 E3	3149 D5	3164 C2	3190 C1	3223 C2	7107 B1
2108 B3	2148 B2	2159 C1	2222 B3	3106 B3	3123 E2	3135 C3	3152 B3	3170 A1	3194 E2	3230 D1	7111 F3
2109 D3	2149 B2	2161 E5	2223 A2	3107 A3	3124 E3	3141 F4	3153 F4	3171 A1	3196 B2	3231 D1	7119 E1
2110 C3	2150 C2	2195 E3	2224 F2	3114 E3	3126 B2	3142 F4	3156 C1	3172 A1	3197 C1	3233 B4	
2112 C2	2151 B1	2196 D5	2225 F2	3115 D3	3127 C2	3143 E5	3157 C1	3173 A1	3198 B2	3236 E3	
2113 B2	2153 B1	2215 E2	3102 B3	3116 D3	3128 C2	3144 E5	3159 A2	3184 E1	3200 D4	3239 D3	



IC 6102 - 6105



1101 A2	2119 D5	2156 B5	3131 D4	3186 E5	5113 D3	7106 A5	9100 E5	9122 C3	9140 D4
1110 B1	2120 D5	2160 C5	3134 D3	3225 B5	5114 E3	7108 C5	9101 D1	9123 F3	9141 E4
1112 F5	2121 C3	2165 E5	3138 E2	3244 C4	5127 F3	7109 C5	9107 F2	9124 D3	9142 E4
1117 F4	2123 C4	2193 E3	3147 D2	5101 A4	6101 C5	7112 D1	9108 E2	9125 B4	9144 E4
2103 B3	2124 D3	2194 E3	3151 D2	5103 B3	6109 F5	7113 E3	9111 B2	9128 C3	9146 D4
2104 B2	2129 D4	2210 B3	3155 C5	5104 B3	6121 A4	7114 F2	9113 D3	9130 B4	9147 F5
2107 B4	2131 C4	3101 B3	3158 C5	5105 D4	6122 A4	7115 E2	9114 F2	9132 C4	9149 E5
2114 E4	2142 D2	3108 A4	3162 C5	5106 E4	6123 A5	7116 D3	9115 E2	9133 B4	9151 E5
2115 E3	2144 E1	3113 B3	3165 B5	5108 C1	7101 A4	7120 E5	9116 D3	9134 C4	
2116 E4	2145 C1	3118 D3	3166 B5	5110 B4	7103 C4	7150 D5	9117 C3	9137 F4	
2117 D5	2146 C1	3120 F4	3167 B5	5111 D4	7104 E4	7151 E3	9119 E3	9138 B4	
2118 D5	2152 B5	3125 C4	3183 E5	5112 B5	7105 B4	7157 D5	9120 B3	9139 D4	



TU

V/A

FM

AM

2-ba

LW

MV

FM

FM

ST

FM

SE

FM

AM

MW

AM

AM

2-ba

m=

LW

m=

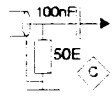

MW

m=

rej

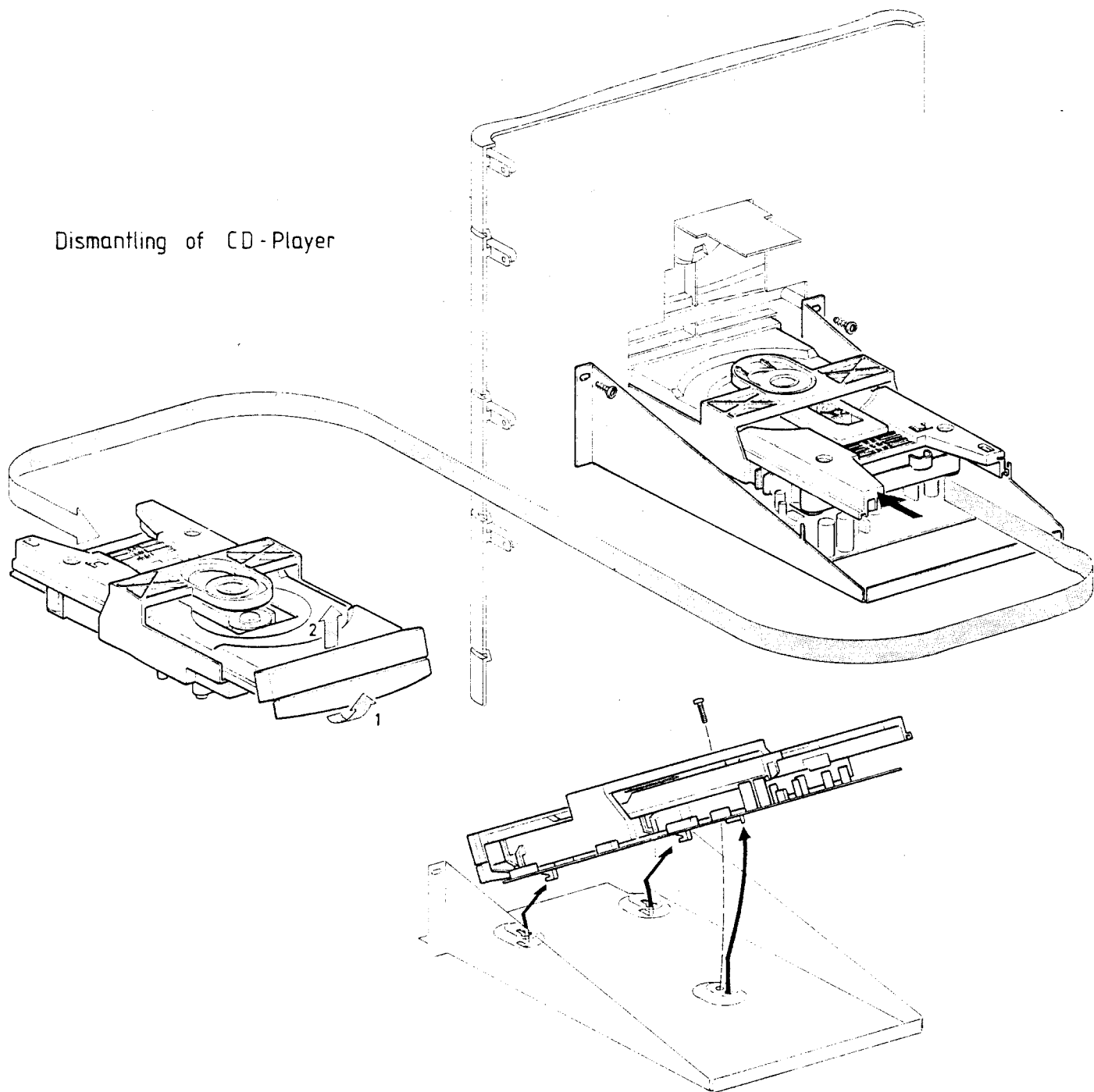


**TUNER 92 Adjustment table ( FM, MW - and FM, MW, LW - versions with AM ferrite antenna )**

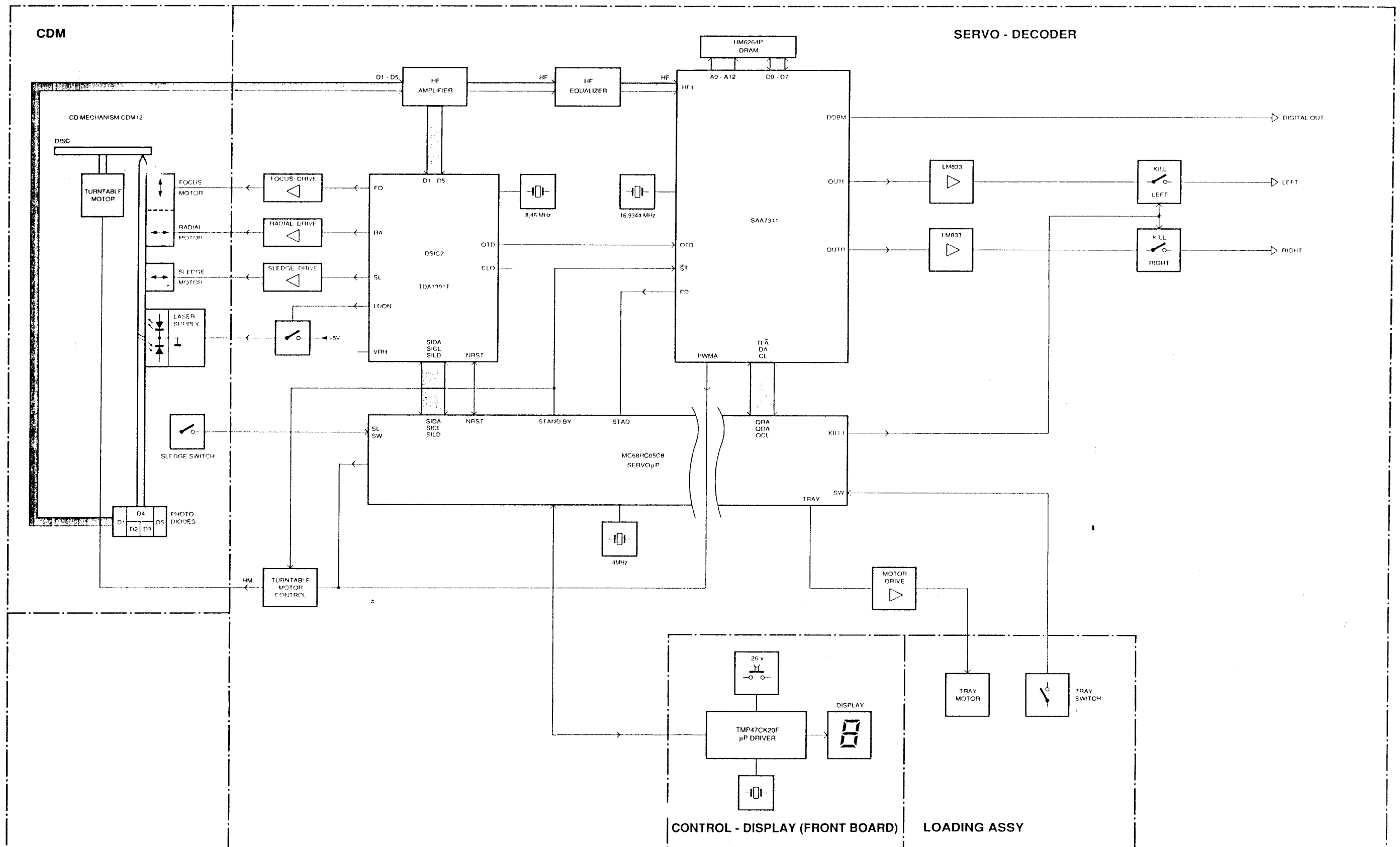
Waverange	Input frequency	Input	Set tuned to	Adjust	Output	Scope / Voltmeter
VARICAP ALIGNMENT						
FM 87.5 - 108MHz			108 MHz	check	6	7....9V
			87.5MHz	check		1.3....2V
AM 2-band version, 10kHz grid 530 - 1710kHz			1710kHz	5108		8.5V $\pm$ 0.1V
			530kHz	check		1V $\pm$ 0.3V
LW 153 - 279kHz			279kHz	5108		8.5V $\pm$ 0.1V
			153kHz	check		1V $\pm$ 0.1V
MW 522 - 1611kHz			1611kHz	2142		8.5V $\pm$ 0.1V
			522kHz	check		1.1V $\pm$ 0.3V
FM IF						
FM	98 MHz, 1mV  mod = 1kHz $\Delta$ f = 75kHz	A	98MHz	5105	1 2	0V $\pm$ 20mV
STEREO CROSSTALK						
FM	98 MHz, 1mV  90% Left +9% pilot	A	98MHz	check	3	low < 1V
				3131	4	Right channel minimum
SEARCH SENSITIVITY						
FM	98 MHz, 15 $\mu$ V  mod = 1kHz $\Delta$ f = 75kHz	A	98MHz	3125	5	Switches just from High to Low
AM - IF						
MW	1494kHz $\Delta$ f = 10kHz as low as possible		1494kHz	5104	7	symmetrical and max height
AM RF						
AM 2-band version, 10kHz grid m=30%, 1kHz	560kHz	B	560kHz	5107	7	MIX. 
	1600kHz		1600kHz	2141		
LW m=30%, 1kHz	155kHz		155kHz	5127 LW		
	270kHz		270kHz	2193		
MW m=30%, 1kHz	558kHz		558kHz	5127 MW		
	1494kHz		1494kHz	2194		

▲ repeat  
▼

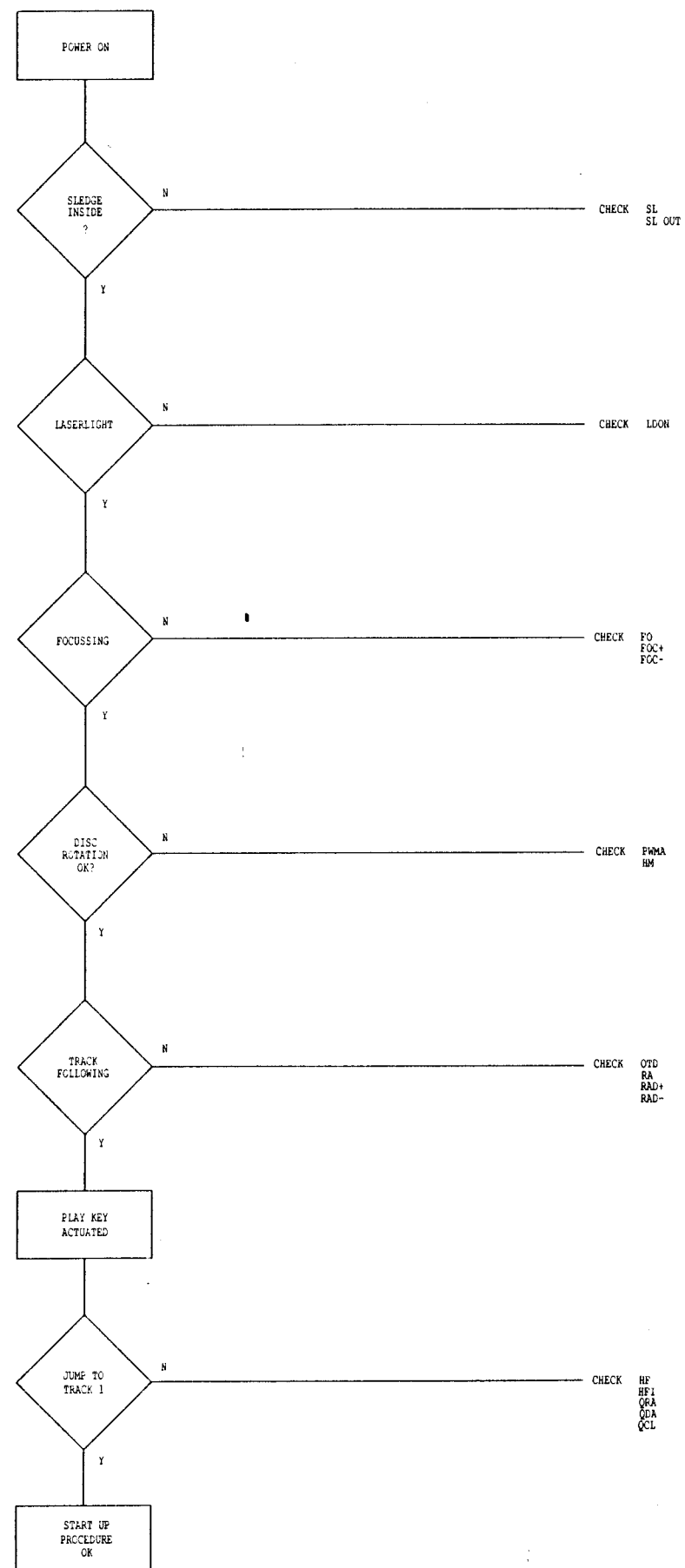
## Dismantling of CD-Player



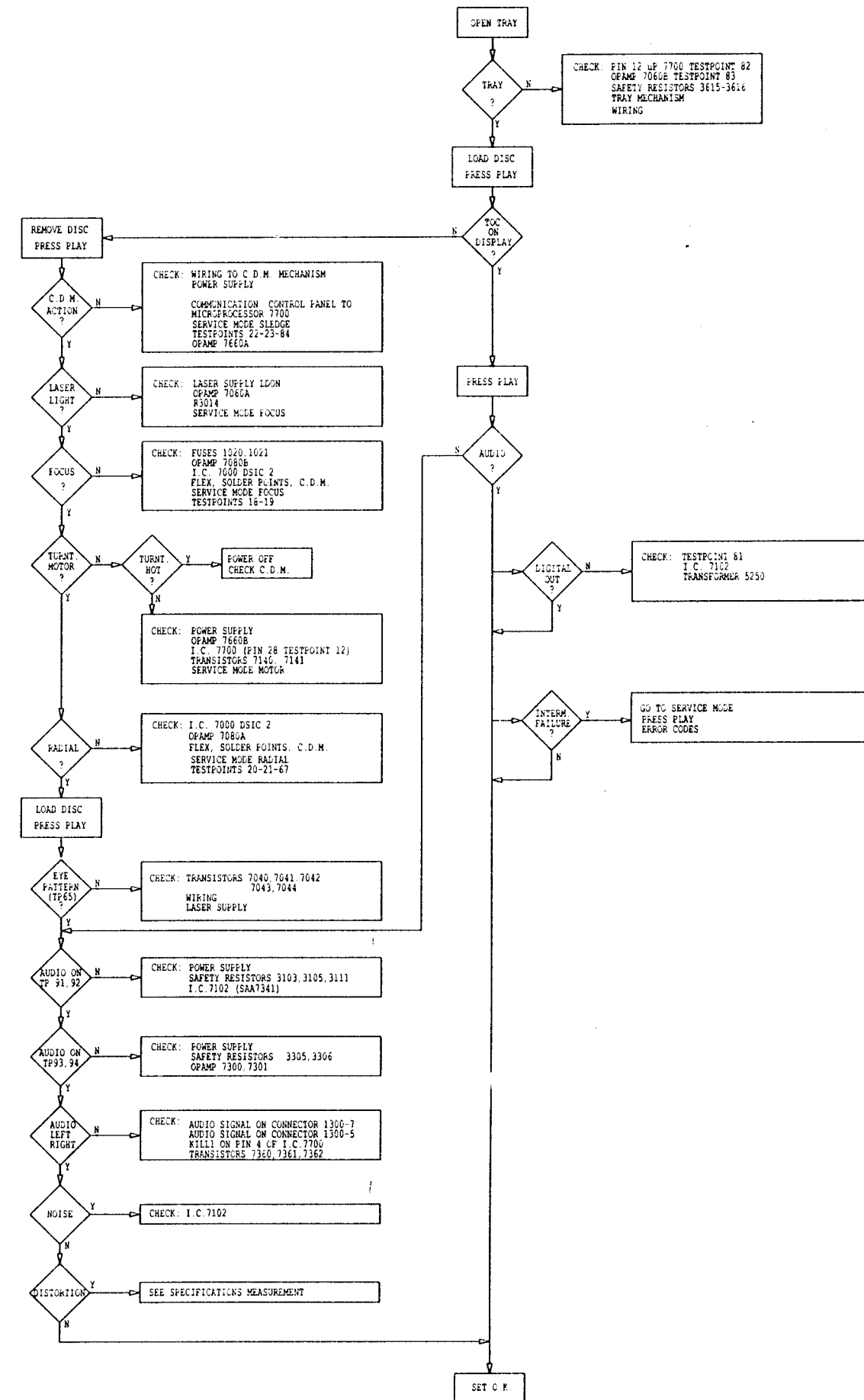
## BLOCK DIAGRAM



## START-UP PROCEDURE



## FAULTFINDING TREE



## ABBREVIATIONS

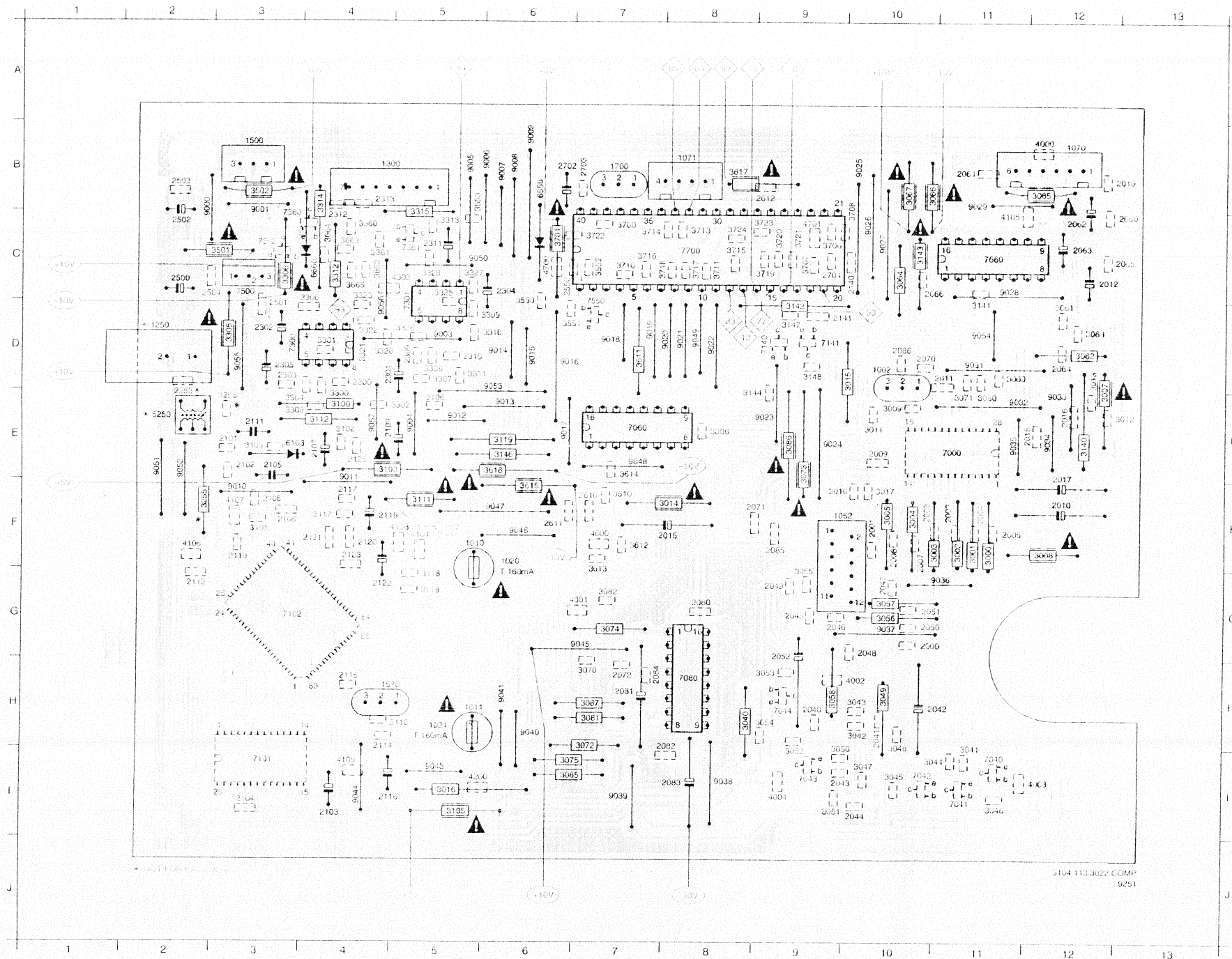
A0-A12	: Address outputs to external RAM
AM*	: Additional mute
CFB	: Data slicer feedback output to capacitor
CL	: Microprocessor interface clock input
CLO	: Clock output
D0-D7	: Data inputs/outputs to external RAM
D1-D4	: Central diode signal input
DA	: Microprocessor interface data input/output line
DE1L	: Pin 1 for external de-emphasis capacitor and resistor
DE1R	: Pin 1 for external de-emphasis capacitor and resistor
DE2L	: Pin 2 for external de-emphasis capacitor and resistor
DE2R	: Pin 2 for external de-emphasis capacitor and resistor
DEEM	: Output for external de-emphasis switches
DOBM	: Digital audio output
FO	: Focus actuator output
HFD	: High frequency detector
HFI*	: Inverting data slicer input
HFI	: Non-inverting data slicer input
HM	: Motor control signal
IREF	: Current reference output
KO*	: Kill out
KTC	: Kill time capacitor connection
LDON	: Laser drive on
MACC	: Motor accelerate signal
MBRA	: Motor brake signal
MHAL	: Hall effect detector for motor
NRST	: Reset input
OC	: VCO control
OTD	: Off track detector
OUTL	: Left channel output
OUTR	: Right channel output
PD	: Phase detector
PWMA	: Pulse width modulated motor control acceleration
PWMB	: Pulse width modulated motor brake signal
R/A	: Request/acknowledge
SD1-5	: Photodiode signals
SICL	: Serial interface clock
SIDA	: Serial interface data
SILD	: Serial interface load
SL	: Sledge output
ST*	: Standby mode
TS1-TS2	: Test input
VddA	: Power supply analog part
VddD	: Power supply digital part
VRH	: Reference input for A/D converter
VRL	: Reference input for A/D converter
VssA	: Ground analog part
VssD	: Ground digital part
WE	: Write enable
XIN	: Crystal oscillator input
XOUT	: Output to clock crystal
XTLI	: Oscillator input
XTLO	: Oscillator output
XTLR	: Oscillator reference

\* log. 0-active !

## CD COMPONENT AND CHIP LAYOUT

1002	D10	2008	F10	2050	G10	2101	E3	2122	G4	2502	C2	3010	F9	3052	I9	3075	I6	3140	E12	3316	D5	3552	C7	3711	C8	4106	F2	7080	H8	9007	B6	9027	C10	9049	D8
1010	F5	2009	E10	2051	G10	2102	E3	2123	F4	2503	B2	3011	E10	3053	H9	3080	E11	3141	D11	3317	D5	3553	C5	3713	C8	4107	F3	7101	I3	9008	B6	9028	C11	9050	C5
1011	H5	2010	F12	2052	G9	2103	I4	2125	E4	2504	C2	3012	E12	3054	H9	3081	H7	3142	D9	3318	C4	3610	F7	3714	C7	4108	F4	7102	G3	9009	B6	9029	B11	9051	E2
1020	F6	2011	D10	2060	C12	2104	I3	2140	C10	2550	C6	3013	D12	3055	G9	3082	G7	3143	C10	3313	C5	3611	D7	3715	C6	4109	I4	7140	D9	9010	F3	9031	D11	9052	E2
1021	H5	2012	C12	2061	B11	2105	E3	2141	D9	2610	F7	3014	F7	3056	G10	3083	I6	3144	E8	3314	C4	3612	F7	3716	C7	4200	I5	7141	D9	9011	F4	9032	E11	9053	D5
1052	F9	2015	F7	2062	C12	2106	F3	2253	E2	2611	F6	3015	D10	3057	G10	3086	E9	3146	E6	3315	C5	3613	G7	3717	C8	4302	C4	7300	D9	9012	E5	9033	E12	9054	D11
1070	B12	2016	E12	2063	C12	2107	E4	2300	D4	2612	B8	3016	I5	3058	H9	3087	H7	3147	D9	3320	D4	3614	E7	3718	C7	4600	F7	7301	D5	9013	E6	9034	E12	9055	D3
1071	B8	2017	E12	2064	C12	2108	F3	2301	D4	2702	B6	3017	F10	3060	D11	3100	E4	3148	D9	3321	D4	3615	F6	3719	C8	4700	C6	7360	C3	9014	E6	9035	E11	9056	D4
1250	D2	2018	E12	2065	C12	2109	E4	2302	D3	2703	B7	3018	H8	3061	D12	3101	F3	3255	F2	3322	D4	3616	E6	3720	C9	4701	C9	7361	C5	9015	D6	9036	G10	9057	E4
1300	B4	2019	B12	2066	C10	2110	F3	2303	D3	2704	C9	3041	I11	3062	D12	3102	E4	3256	E3	3323	C4	3617	B8	3721	C9	5250	E2	7362	C3	9016	E6	9037	G10		
1500	B3	2040	H9	2070	D10	2111	E3	2304	C6	3000	F11	3042	H10	3063	D12	3103	E4	3350	E4	3325	C5	3662	C4	3722	C7	6103	E3	7500	C3	9017	E6	9038	I8		
1570	H4	2041	H10	2071	F8	2112	G2	2305	D3	3001	F11	3043	H10	3064	C10	3105	I5	3301	D4	3326	D5	3663	C4	3723	C8	6550	B6	7550	D7	9018	D7	9039	I7		
1700	B7	2042	H10	2072	H7	2114	I4	2306	D3	3002	F11	3044	I10	3065	B12	3106	E5	3302	E4	3327	C5	3664	C4	3724	C8	6660	C4	7660	C11	9019	D7	9040	H6		
2000	G10	2043	I9	2080	G8	2115	H4	2309	D5	3003	F11	3045	I10	3066	B10	3109	E3	3303	E3	3328	C5	3665	C4	4000	B12	7600	E11	7700	C8	9020	D8	9041	H6		
2001	F10	2044	I10	2081	H7	2116	I4	2310	D5	3004	F10	3046	I11	3067	B10	3110	H5	3304	E3	3360	C4	3700	C7	4001	G6	7040	I11	9000	C2	9021	D8	9043	I5		
2003	F11	2045	G9	2082	I7	2117	F4	2311	C5	3005	F10	3047	I10	3070	H7	3111	F5	3305	D3	3361	C4	3701	C6	4002	H10	7041	I11	9001	C3	9022	D8	9044	I4		
2004	F11	2046	G9	2083	I8	2118	G5	2312	C4	3006	E9	3048	I10	3071	E11	3112	E4	3306	C3	3501	C2	3706	C9	4003	I12	7042	I10	9003	D5	9023	E8	9045	G6		
2005	F11	2047	G10	2084	H7	2119	F4	2313	B4	3007	E12	3049	H10	3072	I7	3113	G5	3307	D5	3502	B3	3707	C9	4004	I9	7043	I9	9004	E5	9024	E9	9046	F6		
2007	G10	2048	G10	2085	F9	2120	F4	2500	C2	3008	F12	3050	I9	3073	F9	3114	G5	3308	D5	3550	D6	3708	C10	4104	F5	7044	H9	9005	B5	9025	B10	9047	F6		
2008	F10	2049	G9	2086	D10	2121	F4	2501	D3	3009	E10	3051	I9	3074	G7	3119	E6	3309	D5	3551	D6	3710	C7	4105	C11	7060	E7	9006	B6	9026	C10	9048	E7		

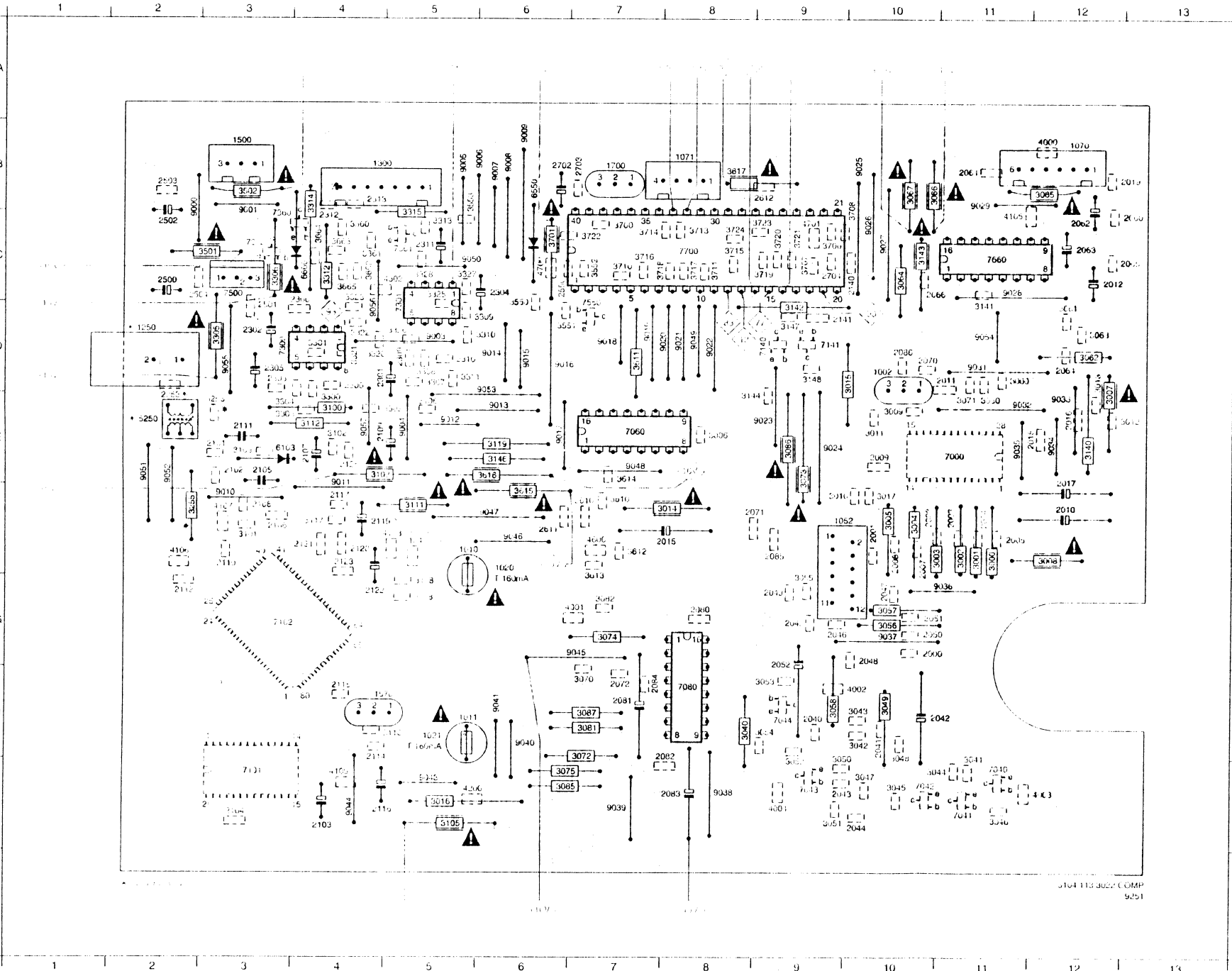
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1010	F9	2008	F4	2047	G5	2052	I7	2115	H10	2305	D11	2704	C5	3017	F4	3057	G4	3082	G7	3141															
1011	H9	2009	E5	2048	H5	2053	I7	2116	I10	2306	D11	2705	C6	3018	I6	3058	H5	3083	E8	3142															
1020	G9	2009	E5	2049	G6	2054	H7	2117	F10	2309	D10	2706	D1	3019	I3	3059	E3	3084	E6	3143															
1021	I9	2010	F2	2050	G4	2055	D4	2118	F9	2310	D9	2707	G2	3020	I4	3060	D2	3085	H8	3144															
1052	F5	2011	E4	2051	G4	2056	D4	2119	F10	2311	D9	2708	G3	3021	I5	3061	D2	3086	H8	3145															
1070	B2	2012	C2	2052	H6	2101	E12	2120	F10	2312	C10	2709	G4	3022	I6	3062	D2	3087	H8	3146															
1071	B7	2015	F7	2050	C2	2102	F11	2121	F11	2313	C10	2710	G5	3023	I7	3063	D2	3088	H8	3147															
1250	D12	2016	E3	2061	B4	2103	I11	2122	G10	2300	D12	2711	G6	3024	I8	3064	D4	3089	H8	3148															
1300	B10	2017	F2	2062	C2	2104	I11	2123	G10	2301	D11	2712	G7	3025	I9	3065	D2	3090	H8	3149															
1500	B11	2018	E3	2063	C2	2105	F11	2125	F10	2302	C12	2713	G8	3026	I10	3066	D2	3091	H8	3150															
1570	H10	2019	B2	2064	D2	2106	F11	2140	D5	2503	B12	2714	G9	3027	I11	3067	D2	3092	H8	3151															
1700	B7	2040	H5	2065	C2	2107	E11	2141	D5	2504	D12	2715	G10	3028	I12	3068	D2	3093	H8	3152															
2000	H4	2041	I5	2066	D4	2108	F11	2253	E12	2550	D8	2716	G11	3029	I13	3069	D2	3094	H8	3153															
2001	F5	2042	H4	2070	D4	2109	E10	2300	E10	2610	F8	2717	G12	3030	I14	3070	D2	3095	H8	3154															
2003	F4	2043	I5	2071	F6	2110	G12	2301	E10	2611	F8	2718	G13	3031	I15	3071	D2	3096	H8	3155															
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2005	F3	2045	G5	2080	G6	2112	G12	2303	E11	2702	B8	2720	G15	3033	I17	3073	D2	3098	H8	3157															



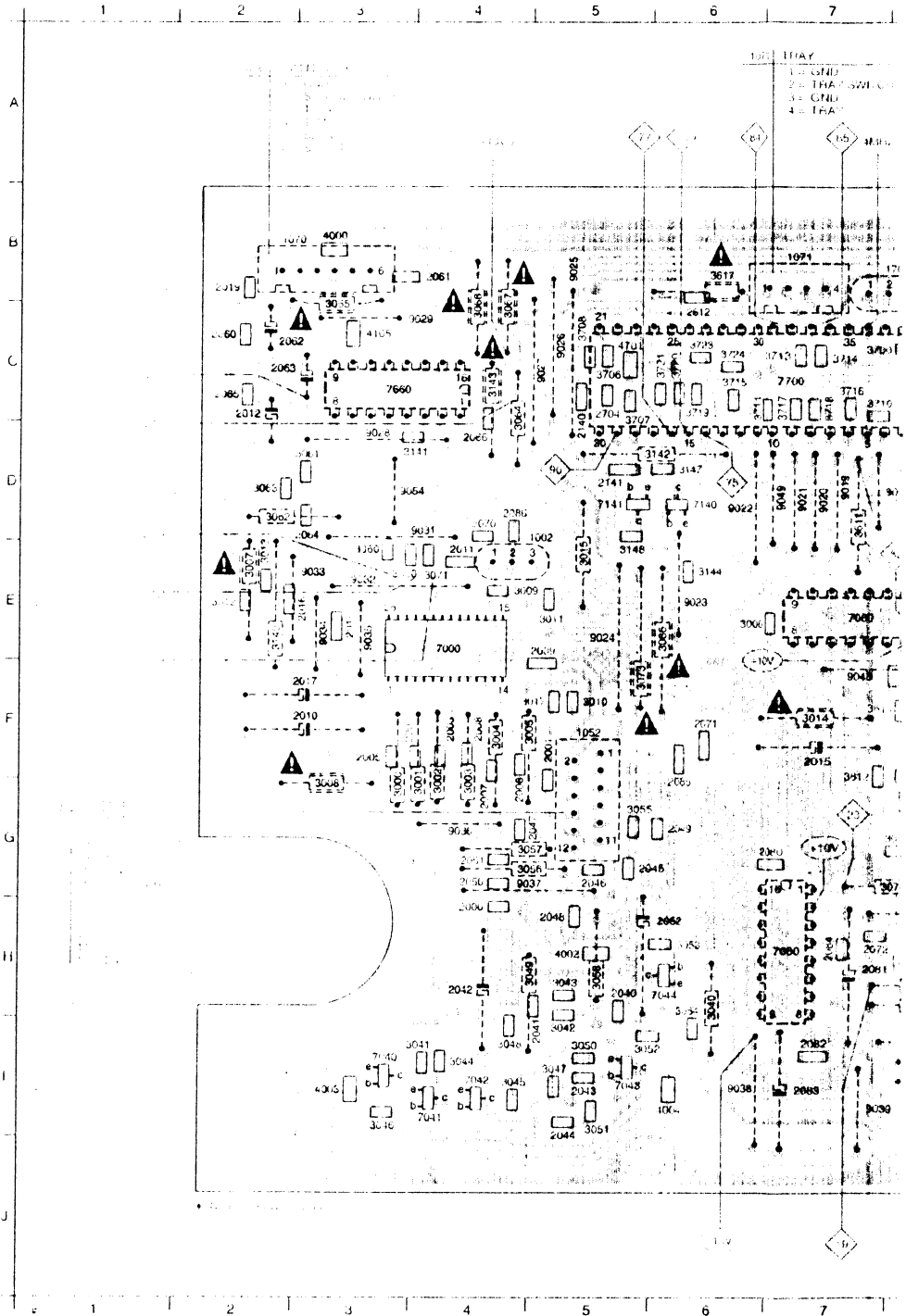


CD COMPONENT AND CHIP LAYOUT

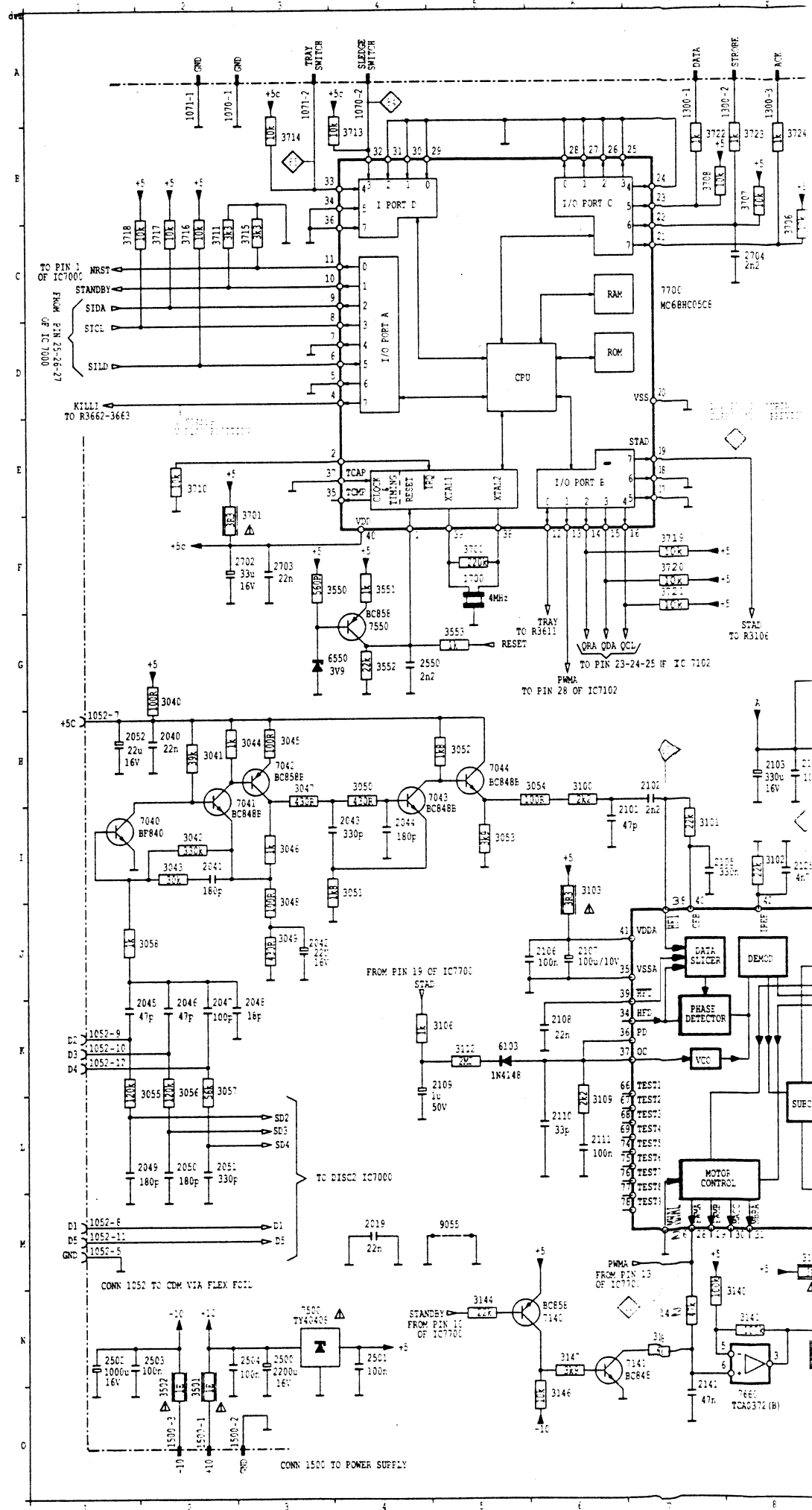
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1010	F5	2009	E10	2051	G10	2102	E3	2123	F4	2503	B2	3011	E10	3053	H9	3076	E11	3141	D11	3311	D5	3553	C5	3712	C8	4107	F3	7101	I3	9008	B6	9028	C11	9050	C5
1011	H5	2010	F12	2052	G9	2103	I4	2125	E4	2504	C2	3012	E12	3054	H9	3077	H7	3142	D9	3312	C4	3554	C7	3713	C8	4108	F4	7102	G3	9009	B6	9029	B11	9051	E2
1020	F6	2011	D10	2060	C12	2104	I3	2140	C10	2550	C6	3013	D12	3055	G9	3082	G7	3143	C10	3313	C5	3555	C7	3714	C7	4109	I4	7140	D9	9010	F3	9031	D11	9052	E2
1021	H5	2012	C12	2061	B11	2105	E3	2141	D9	2610	F7	3014	F7	3056	G10	3085	I6	3144	E8	3314	C4	3556	C7	3716	C7	4200	I5	7141	D9	9011	F4	9032	E11	9053	D5
1052	F9	2015	F7	2062	C12	2106	F3	2253	E2	2611	F6	3015	D10	3057	G10	3086	E9	3146	E6	3315	C5	3557	C7	3717	C8	4302	C4	7300	D3	9012	E5	9033	E12	9054	D11
1070	B12	2016	E12	2063	C12	2107	E4	2300	D4	2612	B8	3016	I5	3058	H9	3087	H7	3147	D9	3320	D4	3558	C7	3718	C7	4600	F7	7301	D5	9013	E6	9034	E12	9055	D3
1071	B8	2017	E12	2064	D12	2108	F3	2301	D4	2702	B6	3017	F10	3060	D11	3100	E4	3148	D9	3321	D4	3559	F6	3719	C8	4700	C6	7360	C3	9014	D6	9035	E11	9056	D4
1250	D2	2018	E12	2065	C12	2109	E4	2302	D3	2703	B7	3040	H8	3061	D12	3101	F3	3255	F2	3322	D4	3560	E6	3720	C9	4701	C9	7361	C5	9015	D6	9036	G10	9057	E4
1300	B4	2019	B12	2066	C10	2110	F3	2303	D3	2704	C9	3041	I11	3062	D12	3102	E4	3256	E3	3323	C4	3561	B8	3721	C9	5250	E2	7362	C3	9016	L6	9037	G10		
1500	B3	2040	H9	2070	D10	2111	E3	2304	C6	3000	F11	3042	H10	3063	D12	3103	E4	3300	E4	3325	C5	3562	C4	3722	C7	6103	E3	7500	C3	9017	E6	9038	I8		
1570	H4	2041	H10	2071	F8	2112	G2	2305	D3	3001	F11	3043	H10	3064	C10	3105	I5	3301	D4	3326	D5	3563	C4	3723	C8	6550	B6	7550	D7	9018	D7	9039	I7		
1700	B7	2042	H10	2072	H7	2114	I4	2306	D3	3002	F11	3044	I10	3065	B12	3106	E5	3302	E4	3327	C5	3564	C4	3724	C8	6660	C4	7660	C11	9019	D7	9040	H6		
2000	G10	2043	I9	2080	G8	2115	H4	2309	D5	3003	F11	3045	I10	3066	B10	3109	E3	3303	E3	3328	C5	3565	C4	4030	B12	7600	E11	7700	C8	9020	D8	9041	H6		
2001	F10	2044	I10	2081	H7	2116	I4	2310	D5	3004	F10	3046	I11	3067	B10	3110	H5	3304	E3	3360	C4	3700	C7	4031	G6	7040	I11	9000	C2	9021	D8	9043	I5		
2003	F11	2045	G9	2082	I7	2117	F4	2311	C5	3005	F10	3047	I10	3067	H7	3111	F5	3305	D3	3361	C4	3701	C6	4032	H10	7041	I11	9001	C3	9022	D8	9044	I4		
2004	F11	2046	G9	2083	I8	2118	G5	2312	C4	3006	E9	3048	I10	3071	E11	3112	E4	3306	C3	3501	C2	3706	C9	4033	I12	7042	I10	9003	D5	9023	E8	9045	G6		
2005	F11	2047	G10	2084	H7	2119	F4	2313	G4	3007	E12	3049	H10	3072	I7	3117	F4	3307	D5	3502	B3	3707	C9	4034	I9	7043	I9	9004	E5	9024	E9	9046	F6		
2007	G10	2048	F9	2085	F9	2120	F4	2500	C2	3008	F12	3050	I9	3073	F9	3118	G5	3308	D5	3550	D6	3708	C10	4104	F5	7044	H9	9005	B5	9025	B10	9047	F6		
2008	F10	2049	G9	2086	D10	2121	F4	2501	D3	3009	E10	3051	I9	3074	G7	3119	E6	3309	D5	3551	D6	3710	C7	4105	C11	7060	E7	9006	B6	9026	C10	9048	E7		

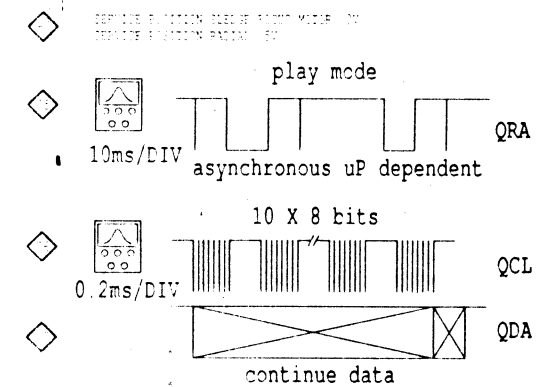
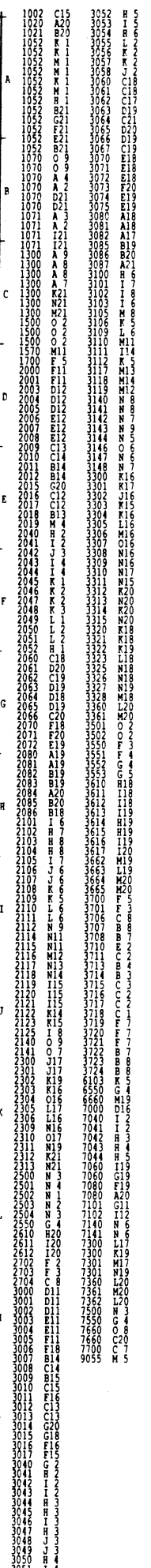


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1010	F9	2008	F4	2047	G5	2062	I7	2115	H10	2305	D11	2704	C5	3017	F4	3057	G4	3082	G7	3147
1011	H5	2009	G4	2048	H5	2063	I7	2116	H10	2306	D11	2705	G3	3018	I6	3058	H5	3083	H8	3148
1020	G9	2009	E5	2049	G6	2064	H7	2117	F10	2307	D10	2706	G3	3019	I3	3059	E3	3084	E6	3149
1021	I9	2010	F2	2050	G4	2065	G6	2118	G9	2310	D9	2707	G4	3020	I5	3060	D2	3085	H8	3150
1052	F5	2011	E4	2051	G4	2066	D4	2119	F10	2311	C9	2708	G4	3021	H5	3061	D2	3086	H8	3151
1070	B2	2012	C2	2052	H6	2101	E12	2120	F10	2312	C10	2709	F4	3022	I4	3062	D2	3100	E10	3152
1071	B7	2015	F7	2060	C2	2102	F11	2121	F11	2313	C10	2710	F5	3023	I4	3063	D4	3101	E11	3153
1250	D12	2016	E3	2061	B4	2103	I11	2122	G10	2314	D12	2711	F6	3024	I3	3064	D4	3102	E12	3154
1300	B10	2017	F2	2062	C2	2104	I11	2123	G10	2315	D11	2712	F7	3025	I3	3065	D4	3103	E13	3155
1500	B11	2018	E3	2063	C2	2105	F11	2124	G10	2316	D12	2713	F8	3026	I3	3066	D4	3104	E14	3156
1570	H10	2019	B2	2064	D2	2106	F11	2125	G10	2317	D12	2714	F9	3027	I3	3067	D4	3105	E15	3157
1700	B7	2040	H5	2065	C2	2107	E11	2126	G10	2318	D12	2715	F10	3028	I3	3068	D4	3106	E16	3158
2000	H4	2041	I5	2066	D4	2108	F11	2127	G10	2319	D12	2716	F11	3029	I3	3069	D4	3107	E17	3159
2001	F5	2042	H4	2067	D4	2109	E10	2128	G10	2320	D12	2717	F12	3030	I3	3070	D4	3108	E18	3160
2003	F4	2043	I5	2071	F6	2110	G12	2129	G10	2321	D12	2718	F13	3031	I3	3071	D4	3109	E19	3161
2004	F3	2044	J5	2072	H7	2111	E11	2130	G10	2322	D12	2719	F14	3032	I3	3072	D4	3110	E20	3162
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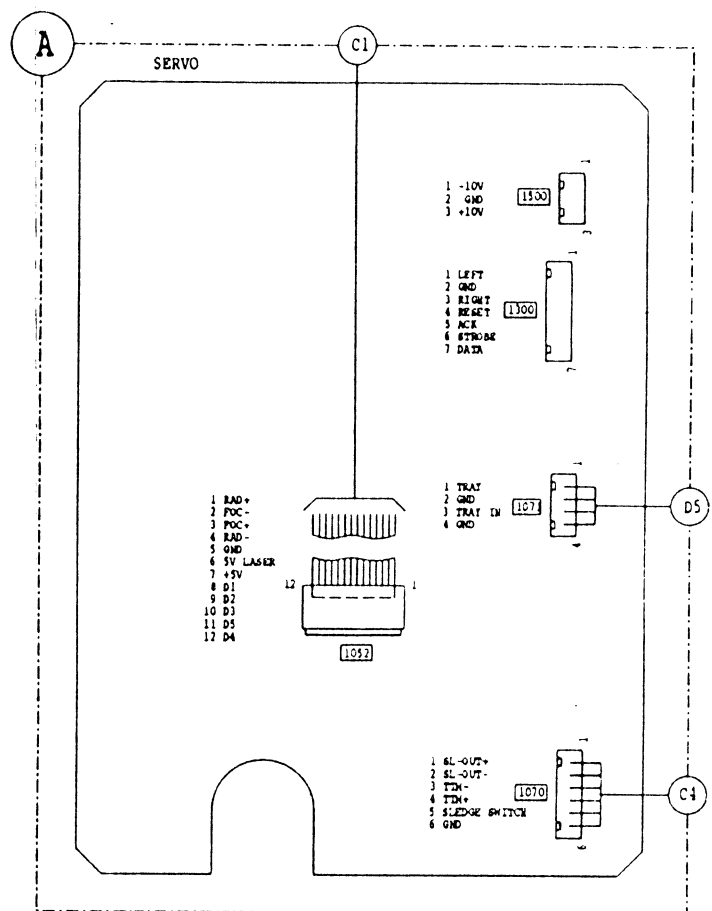






[illegible]

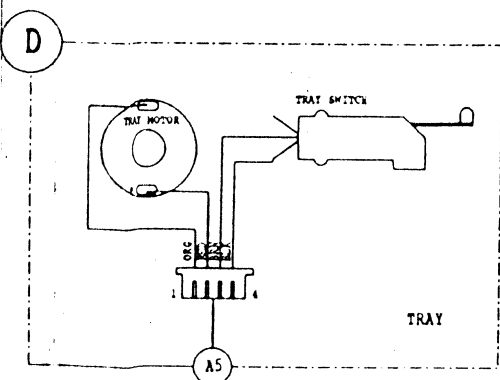
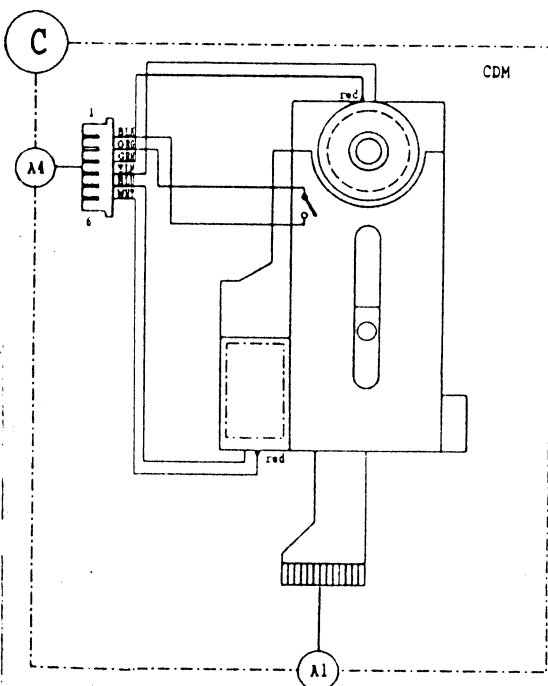
## WIRING DIAGRAM CD-PART



## CD MECHANISM

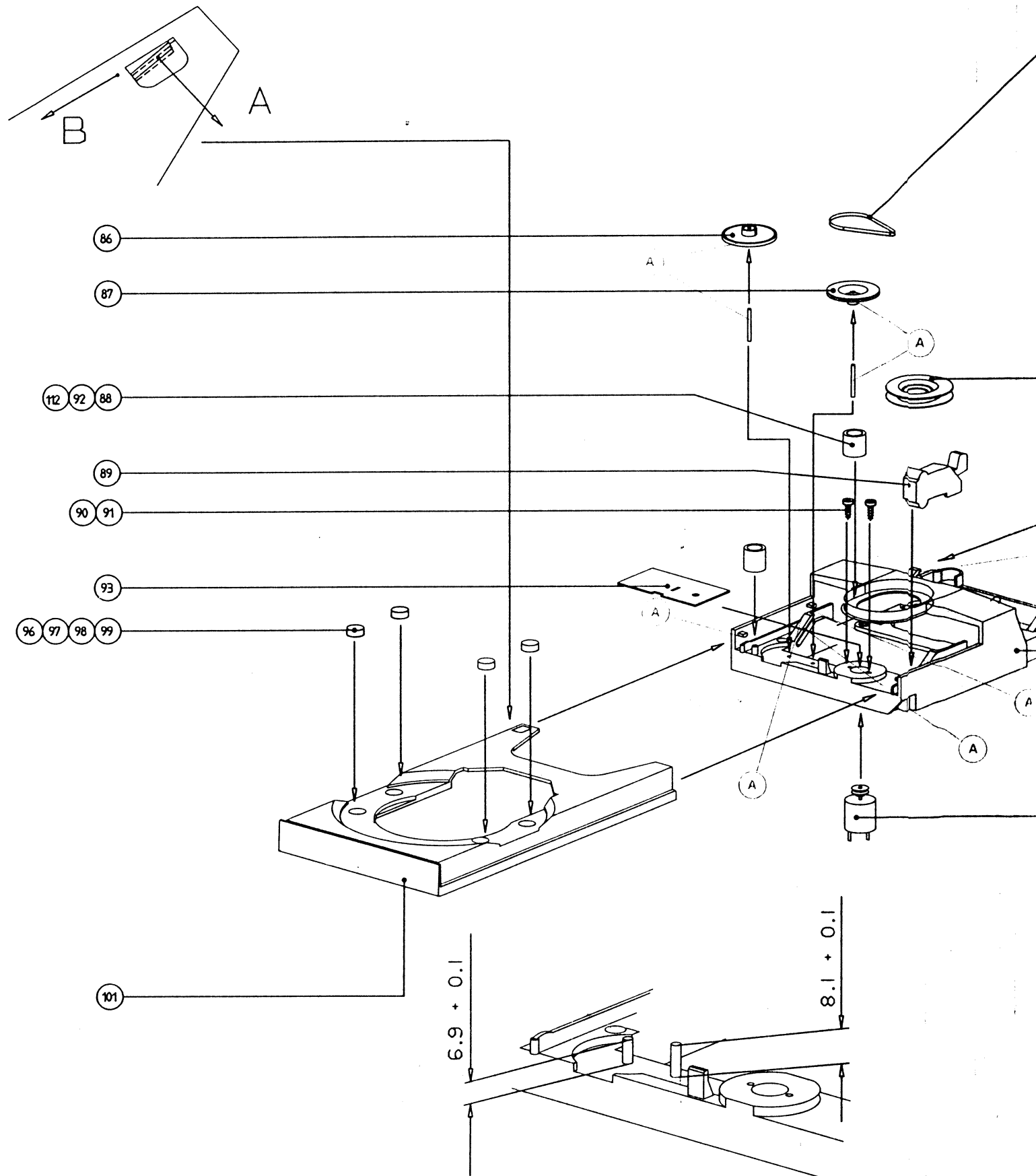
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87	4822 528 81465
88	4822 325 60379
89	4822 276 13222
93	4822 444 60816
96	4822 325 80511
101	4822 444 50679
102	4822 358 31168
103	4822 691 30278
104	4822 325 50215
108	4822 402 61412
109	4822 464 50895
110	4822 444 50678
111	4822 361 21492

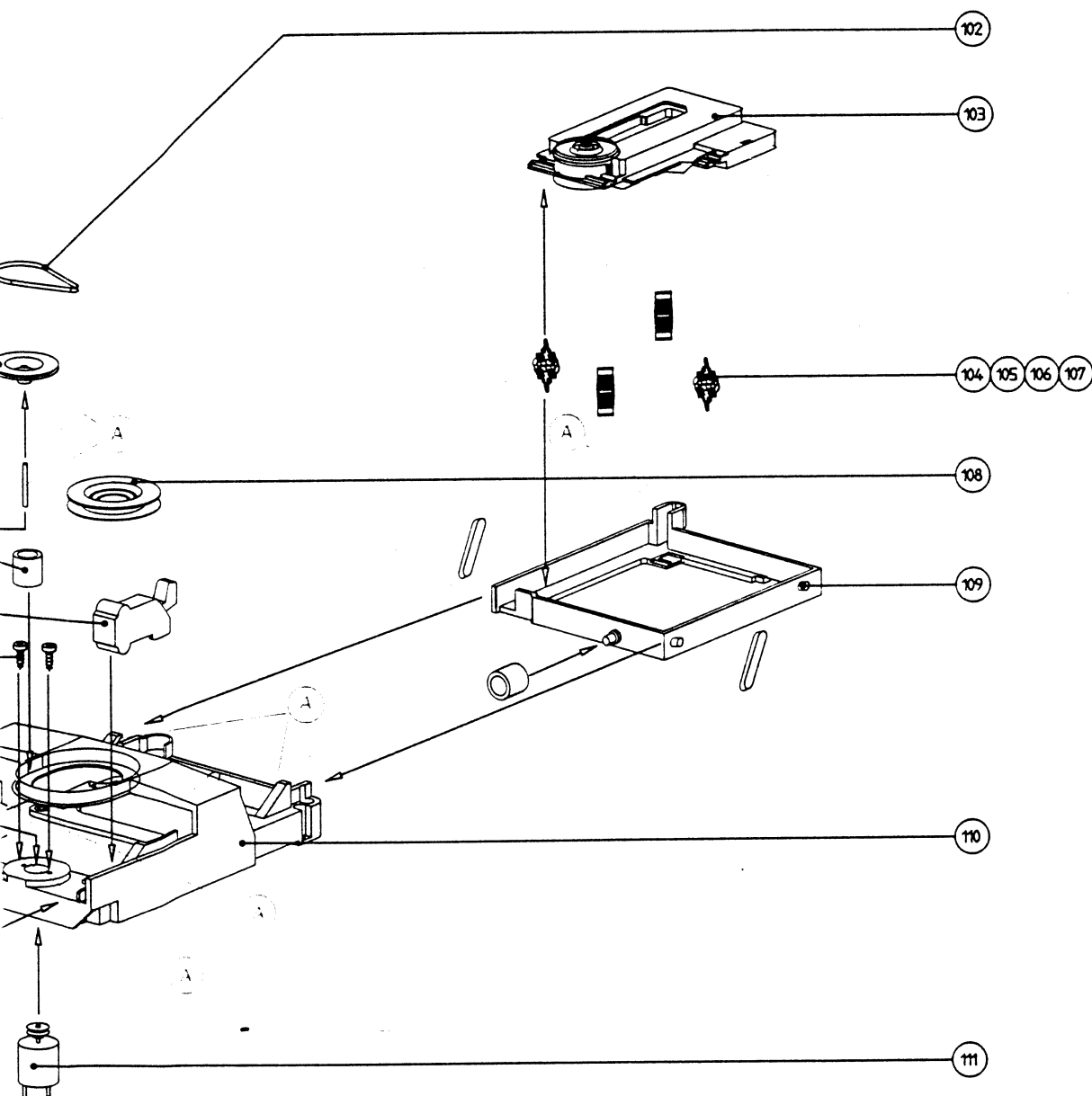
Note : Only the mentioned parts are normal service parts.



## CD EXPLODED VIEW

## DETAIL I





Type of grease:

(A) = 4822 000 00109



## EXPLODED VIEW OF SET I

67

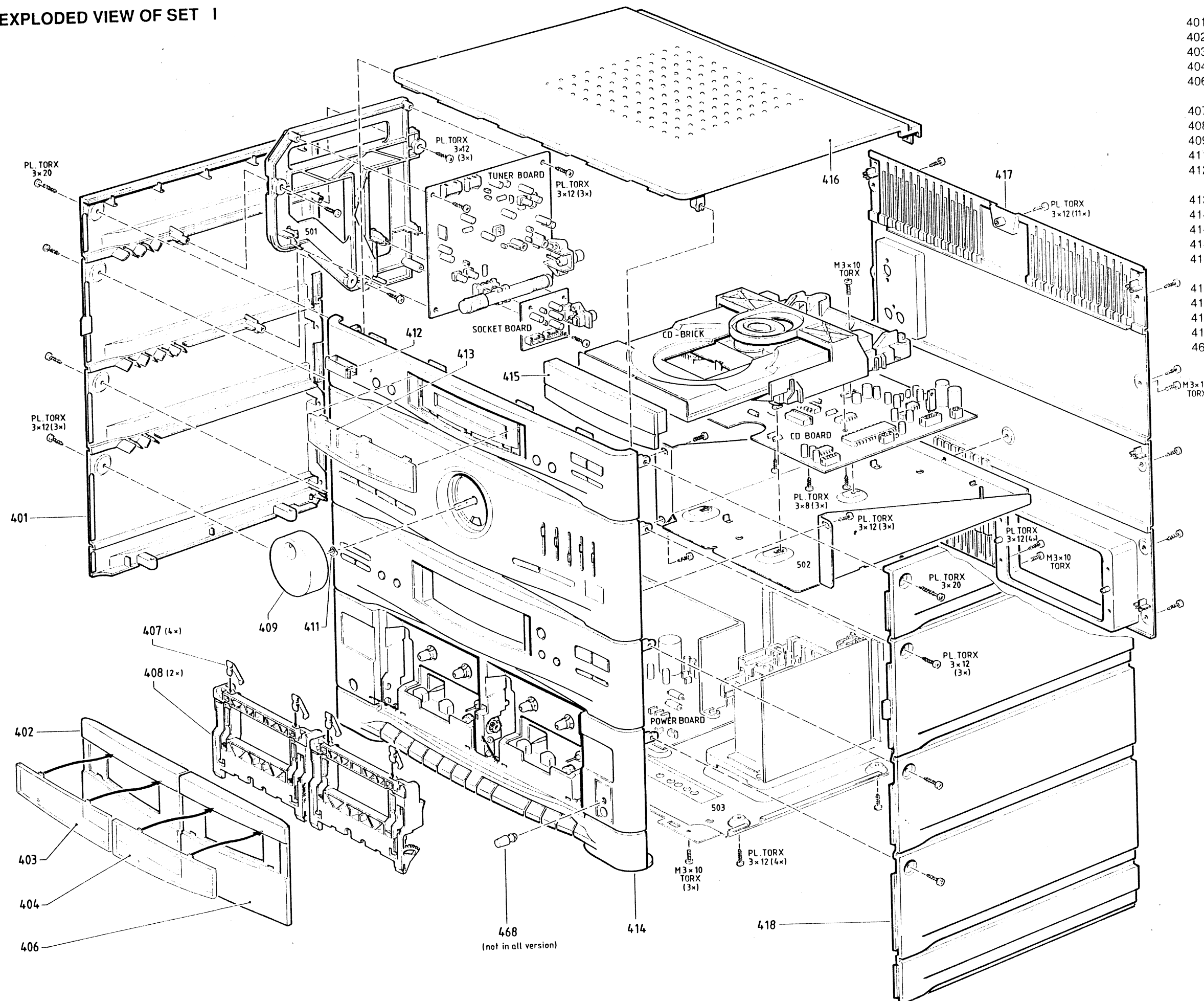
## MECHANICAL PARTS

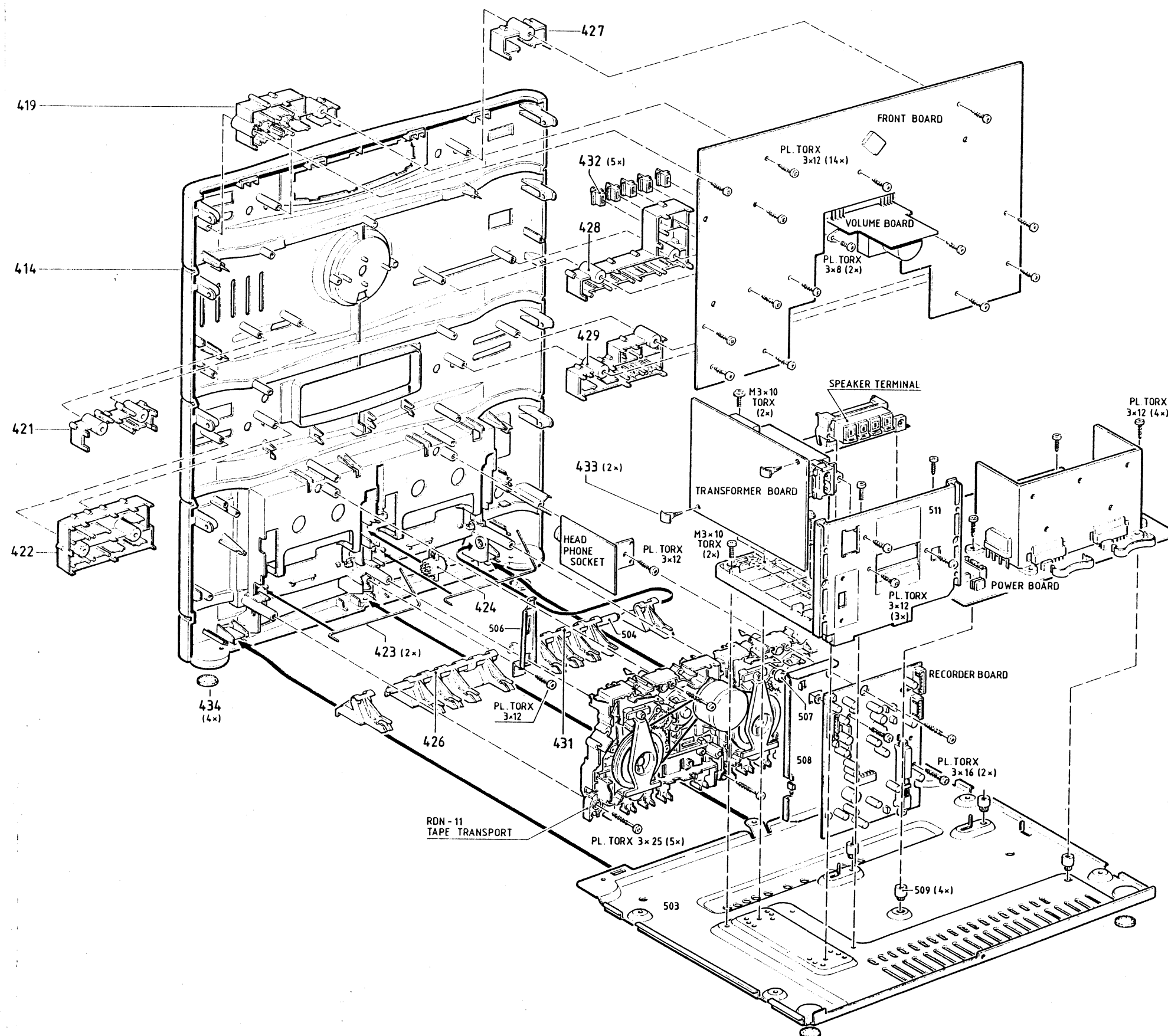
401 4822 426 30153 SIDE LEFT  
 402 4822 443 63936 CASS. DOOR A-DECK  
 403 4822 450 62087 WINDOW A-DECK  
 404 4822 450 62088 WINDOW B-DECK  
 406 4822 443 63935 CASS. DOOR B-DECK

407 4822 492 63927 SPRING.CASS.PRESS  
 408 4822 443 63037 DOOR,CASSETTE  
 409 4822 413 41792 KNOB VOLUME  
 411 4822 492 51374 SPRING KNOB CLAMP  
 412 4822 381 11418 IR WINDOW

413 4822 450 62074 WINDOW PRINTED  
 414 4822 426 51661 FRONT AS445/20  
 414 4822 426 51644 FRONT AS445/21, '30  
 414 4822 426 51643 FRONT AS440/37  
 414 4822 426 51642 FRONT AS440/20/22/25

415 4822 444 40661 FRONT CD TRAY  
 416 4822 426 60639 COVER  
 417 4822 426 20241 BACK PLATE  
 418 4822 426 30152 SIDE RIGHT  
 468 4822 410 62622 KNOB MICRO-MIX





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414 4822 426 51661 FRONT AS445/20
414 4822 426 51644 FRONT AS445/21,/30
414 4822 426 51643 FRONT AS440/37
414 4822 426 51642 FRONT AS440/20/22/25
419 4822 410 62618 KNOB PRSET UP/DOWN

421 4822 410 62624 KNOB HSD
422 4822 410 62626 KNOB CD RIGHT
423 4822 492 42595 SPRING CASS. COMPARTMENT
424 4822 529 10278 DAMPER
426 4822 410 62619 BUTTON SET

428 4822 410 62623 KNOB AUTOPROGRAM
428 4822 410 62617 KNOB SELECTOR+POWER
429 4822 410 62625 KNOB CD LEFT
431 4822 410 62621 .BUTTON SET
432 4822 411 61929 KNOB EQUALIZER

433 4822 466 93148 SPACER
434 4822 462 40683 FOOT RUBBER
      4822 691 20842 RDN-11 TAPE TRANSPORTS

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- 33 7 7 7 7

## MICRO MIX BOARD

## MISCELLANEOUS

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 1900 4822 267 30968 PHONE SOCKET
 

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## INTEGRATED CIRCUITS

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 7900 4822 209 83274 NJM4560D
 

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## RESISTORS

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|      |                |      |    |       |
|------|----------------|------|----|-------|
| 3900 | 4822 116 52256 | 2k2  | 5% | 0.16W |
| 3901 | 4822 116 52175 | 100R | 5% | 0.5W  |
| 3902 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3903 | 4822 116 52234 | 100k | 5% | 0.5W  |
| 3904 | 4822 116 52234 | 100k | 5% | 0.5W  |

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3905 4822 100 11869 TRIMPOT 20k LIN.

|      |                |      |    |      |
|------|----------------|------|----|------|
| 3906 | 4822 116 52175 | 100R | 5% | 0.5W |
| 3907 | 4822 116 52234 | 100k | 5% | 0.5W |
| 3908 | 4822 116 52238 | 12k  | 5% | 0.5W |
| 3909 | 4822 116 52233 | 10k  | 5% | 0.5W |

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|      |                |      |    |      |
|------|----------------|------|----|------|
| 3910 | 4822 116 52224 | 470R | 5% | 0.5W |
| 3911 | 4822 116 52238 | 12k  | 5% | 0.5W |
| 3912 | 4822 116 52303 | 8k2  | 5% | 0.5W |

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## CAPACITORS

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|      |                |       |     |     |
|------|----------------|-------|-----|-----|
| 2900 | 4822 124 40242 | 1μF   | 20% | 63V |
| 2901 | 4822 122 33195 | 100pF | 10% | 50V |
| 2902 | 4822 122 33519 | 470pF | 10% | 50V |
| 2903 | 4822 122 33848 | 47pF  | 5%  | 50V |
| 2904 | 4822 124 40435 | 10μF  | 20% | 50V |

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|      |                |       |     |     |
|------|----------------|-------|-----|-----|
| 2905 | 4822 122 33848 | 47pF  | 5%  | 50V |
| 2906 | 4822 122 33848 | 47pF  | 5%  | 50V |
| 2907 | 4822 124 40435 | 10μF  | 20% | 50V |
| 2908 | 4822 124 40435 | 10μF  | 20% | 50V |
| 2909 | 4822 122 33195 | 100pF | 10% | 50V |

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|      |                |       |     |     |
|------|----------------|-------|-----|-----|
| 2910 | 4822 122 33519 | 470pF | 10% | 50V |
| 2911 | 4822 122 33848 | 47pF  | 5%  | 50V |
| 2913 | 4822 124 40242 | 1μF   | 20% | 63V |
| 2914 | 4822 122 33848 | 47pF  | 5%  | 50V |
| 2915 | 4822 124 40435 | 10μF  | 20% | 50V |

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|      |                |       |     |     |
|------|----------------|-------|-----|-----|
| 2916 | 4822 124 40435 | 10μF  | 20% | 50V |
| 2917 | 4822 124 41525 | 100μF | 20% | 25V |
| 2918 | 4822 126 11585 | 22nF  | 50V |     |
| 2919 | 4822 124 40433 | 47μF  | 20% | 25V |

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## FRONT BOARD

## MISCELLANEOUS

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|      |                |                     |
|------|----------------|---------------------|
| 1408 | 4822 267 30631 | CINCH SOCKET        |
| 1410 | 4822 267 30968 | PHONE SOCKET        |
| 1415 | 4822 130 91245 | FTD-11894           |
| 1416 | 4822 134 40965 | LAMP INC. 12V 150mA |
| 1417 | 4822 134 40965 | LAMP INC. 12V 150mA |

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|      |                |             |
|------|----------------|-------------|
| 1421 | 4822 276 13114 | TACT SWITCH |
| 1422 | 4822 276 13114 | TACT SWITCH |
| 1424 | 4822 276 13114 | TACT SWITCH |
| 1425 | 4822 276 13114 | TACT SWITCH |
| 1426 | 4822 276 13114 | TACT SWITCH |

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|      |                |             |
|------|----------------|-------------|
| 1427 | 4822 276 13114 | TACT SWITCH |
| 1428 | 4822 276 13114 | TACT SWITCH |
| 1429 | 4822 276 13114 | TACT SWITCH |
| 1430 | 4822 276 13114 | TACT SWITCH |
| 1431 | 4822 276 13114 | TACT SWITCH |

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|      |                |             |
|------|----------------|-------------|
| 1432 | 4822 276 13114 | TACT SWITCH |
| 1433 | 4822 276 13114 | TACT SWITCH |
| 1434 | 4822 276 13114 | TACT SWITCH |
| 1435 | 4822 276 13114 | TACT SWITCH |
| 1436 | 4822 276 13114 | TACT SWITCH |

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|      |                |             |
|------|----------------|-------------|
| 1437 | 4822 276 13114 | TACT SWITCH |
| 1438 | 4822 276 13114 | TACT SWITCH |
| 1439 | 4822 276 13114 | TACT SWITCH |
| 1440 | 4822 276 13114 | TACT SWITCH |
| 1441 | 4822 276 13114 | TACT SWITCH |

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|      |                |             |
|------|----------------|-------------|
| 1442 | 4822 276 13114 | TACT SWITCH |
| 1443 | 4822 276 13114 | TACT SWITCH |
| 1444 | 4822 276 13114 | TACT SWITCH |
| 1446 | 4822 276 13114 | TACT SWITCH |
| 1447 | 4822 276 13114 | TACT SWITCH |

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 1448 4822 276 13114 TACT SWITCH
 

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## DIODES

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|      |                |        |
|------|----------------|--------|
| 6401 | 4822 130 30621 | 1N4148 |
| 6402 | 4822 130 30621 | 1N4148 |
| 6403 | 4822 130 30621 | 1N4148 |
| 6404 | 4822 130 30621 | 1N4148 |
| 6405 | 4822 130 30621 | 1N4148 |

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|      |                |        |
|------|----------------|--------|
| 6406 | 4822 130 30621 | 1N4148 |
| 6407 | 4822 130 30621 | 1N4148 |
| 6408 | 4822 130 30621 | 1N4148 |
| 6409 | 4822 130 30621 | 1N4148 |
| 6410 | 4822 130 30621 | 1N4148 |

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|      |                |        |
|------|----------------|--------|
| 6411 | 4822 130 30621 | 1N4148 |
| 6412 | 4822 130 30621 | 1N4148 |
| 6413 | 4822 130 30621 | 1N4148 |
| 6414 | 4822 130 30621 | 1N4148 |
| 6415 | 4822 130 30621 | 1N4148 |

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|      |                |        |
|------|----------------|--------|
| 6416 | 4822 130 30621 | 1N4148 |
| 6418 | 4822 130 30621 | 1N4148 |
| 6419 | 4822 130 30621 | 1N4148 |
| 6420 | 4822 130 30621 | 1N4148 |
| 6421 | 4822 130 30621 | 1N4148 |

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|      |                |            |
|------|----------------|------------|
| 6422 | 4822 130 30621 | 1N4148     |
| 6423 | 4822 130 30621 | 1N4148     |
| 6424 | 4822 130 30621 | 1N4148     |
| 6425 | 4822 130 30621 | 1N4148     |
| 6427 | 4822 130 34174 | BZX79-C4V7 |

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|      |                |                 |
|------|----------------|-----------------|
| 6428 | 4822 130 34197 | BZX79-C12 (UAW) |
| 6431 | 4822 130 34174 | BZX79-C4V7      |
| 6442 | 4822 130 82021 | LTL307G         |

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## DIODES

|      |                |                     |
|------|----------------|---------------------|
| 6450 | 4822 130 30861 | BZX79-C7V5          |
| 6453 | 4822 130 30621 | 1N4148              |
| 1006 | 4822 130 83092 | LED from Volume pot |

## TRANSISTORS

|      |                |          |
|------|----------------|----------|
| 7406 | 4822 130 40941 | BC558    |
| 7408 | 4822 130 40938 | BC548    |
| 7409 | 4822 130 41344 | BC337-40 |
| 7410 | 4822 130 41344 | BC337-40 |
| 7411 | 4822 130 41344 | BC337-40 |
| 7412 | 4822 130 41344 | BC337-40 |
| 7413 | 4822 130 40938 | BC548    |
| 7421 | 4822 130 44196 | BC548C   |
| 7423 | 4822 130 40941 | BC558    |
| 7424 | 4822 130 41327 | BC327-40 |
| 7426 | 4822 130 40941 | BC558    |
| 7427 | 4822 130 40938 | BC548    |
| 7432 | 4822 130 40938 | BC548    |
| 7433 | 4822 130 40938 | BC548    |
| 7440 | 4822 130 40941 | BC558    |
| 7445 | 5322 130 44779 | BC338-40 |
| 7446 | 5322 130 44779 | BC338-40 |
| 7447 | 4822 130 44246 | BC549C   |
| 7448 | 4822 130 44246 | BC549C   |

## INTEGRATED CIRCUITS

|      |                |                    |
|------|----------------|--------------------|
| 7403 | 4822 209 83274 | NJM4560D           |
| 7407 | 4822 209 83274 | NJM4560D           |
| 7415 | 4822 209 32392 | TMP87CK20F-AS440.1 |
| 7418 | 4822 209 31508 | ST24C01            |
| 7419 | 5322 209 10421 | HEF4094BP          |
| 7420 | 5322 209 10421 | HEF4094BP          |
| 7422 | 4822 214 52009 | GP1U58XP           |
| 7425 | 5322 209 86518 | MC7805CT           |

## COILS

|      |                |                 |
|------|----------------|-----------------|
| 5401 | 5322 242 73697 | CERAM.RES. 8MHz |
| 5402 | 4822 157 50961 | 22μH            |
| 5405 | 4822 157 62552 | COIL 2,2μH      |

## RESISTORS

|      |                |      |    |      |
|------|----------------|------|----|------|
| 3401 | 4822 116 52297 | 68k  | 5% | 0.5W |
| 3402 | 4822 116 52297 | 68k  | 5% | 0.5W |
| 3403 | 4822 116 52264 | 27k  | 5% | 0.5W |
| 3404 | 4822 116 52264 | 27k  | 5% | 0.5W |
| 3405 | 4822 116 52284 | 47k  | 5% | 0.5W |
| 3406 | 4822 116 52284 | 47k  | 5% | 0.5W |
| 3407 | 4822 116 52269 | 3k3  | 5% | 0.5W |
| 3408 | 4822 116 52269 | 3k3  | 5% | 0.5W |
| 3409 | 4822 116 52263 | 2k7  | 5% | 0.5W |
| 3410 | 4822 116 52263 | 2k7  | 5% | 0.5W |
| 3413 | 4822 116 52234 | 100k | 5% | 0.5W |
| 3414 | 4822 116 52234 | 100k | 5% | 0.5W |
| 3415 | 4822 116 52233 | 10k  | 5% | 0.5W |
| 3416 | 4822 116 52233 | 10k  | 5% | 0.5W |
| 3417 | 4822 116 52284 | 47k  | 5% | 0.5W |
| 3418 | 4822 116 52284 | 47k  | 5% | 0.5W |
| 3419 | 4822 116 52284 | 47k  | 5% | 0.5W |
| 3420 | 4822 116 52284 | 47k  | 5% | 0.5W |
| 3421 | 4822 116 52284 | 47k  | 5% | 0.5W |
| 3422 | 4822 116 52284 | 47k  | 5% | 0.5W |

## RESISTORS

|      |                |            |    |       |
|------|----------------|------------|----|-------|
| 3423 | 4822 116 52284 | 47k        | 5% | 0.5W  |
| 3424 | 4822 116 52284 | 47k        | 5% | 0.5W  |
| 3425 | 4822 116 52224 | 470R       | 5% | 0.5W  |
| 3426 | 4822 116 52224 | 470R       | 5% | 0.5W  |
| 3427 | 4822 116 52257 | 22k        | 5% | 0.5W  |
| 3428 | 4822 116 52257 | 22k        | 5% | 0.5W  |
| 3431 | 4822 116 52263 | 2k7        | 5% | 0.5W  |
| 3432 | 4822 116 52263 | 2k7        | 5% | 0.5W  |
| 3433 | 4822 116 52276 | 3k9        | 5% | 0.5W  |
| 3434 | 4822 116 52276 | 3k9        | 5% | 0.5W  |
| 3435 | 4822 050 11002 | 1k         | 5% | 0.2W  |
| 3436 | 4822 050 11002 | 1k         | 5% | 0.2W  |
| 3437 | 4822 116 52264 | 27k        | 5% | 0.5W  |
| 3438 | 4822 116 52264 | 27k        | 5% | 0.5W  |
| 3439 | 4822 116 52224 | 470R       | 5% | 0.5W  |
| 3440 | 4822 116 52224 | 470R       | 5% | 0.5W  |
| 3441 | 4822 116 52224 | 470R       | 5% | 0.5W  |
| 3442 | 4822 116 52224 | 470R       | 5% | 0.5W  |
| 3443 | 4822 116 52291 | 56k        | 5% | 0.5W  |
| 3444 | 4822 116 52291 | 56k        | 5% | 0.5W  |
| 3445 | 4822 051 10333 | 33k        | 2% | 0.25W |
| 3446 | 4822 051 10333 | 33k        | 2% | 0.25W |
| 3447 | 4822 051 10333 | 33k        | 2% | 0.25W |
| 3448 | 4822 051 10333 | 33k        | 2% | 0.25W |
| 3449 | 4822 116 52264 | 27k        | 5% | 0.5W  |
| 3450 | 4822 116 52264 | 27k        | 5% | 0.5W  |
| 3451 | 4822 051 10333 | 33k        | 2% | 0.25W |
| 3452 | 4822 051 10333 | 33k        | 2% | 0.25W |
| 3455 | 4822 051 10333 | 33k        | 2% | 0.25W |
| 3456 | 4822 051 10333 | 33k        | 2% | 0.25W |
| 3457 | 4822 116 52264 | 27k        | 5% | 0.5W  |
| 3458 | 4822 116 52264 | 27k        | 5% | 0.5W  |
| 3459 | 4822 051 10333 | 33k        | 2% | 0.25W |
| 3460 | 4822 051 10333 | 33k        | 2% | 0.25W |
| 3461 | 4822 051 10333 | 33k        | 2% | 0.25W |
| 3462 | 4822 051 10333 | 33k        | 2% | 0.25W |
| 3463 | 4822 116 52285 | 470k       | 5% | 0.5W  |
| 3464 | 4822 116 52285 | 470k       | 5% | 0.5W  |
| 3465 | 4822 116 52296 | 6k8        | 5% | 0.5W  |
| 3466 | 4822 116 52296 | 6k8        | 5% | 0.5W  |
| 3469 | 4822 116 52283 | 4k7        | 5% | 0.5W  |
| 3470 | 4822 116 52283 | 4k7        | 5% | 0.5W  |
| 3471 | 4822 116 52256 | 2k2        | 5% | 0.16W |
| 3472 | 4822 116 52256 | 2k2        | 5% | 0.16W |
| 3473 | 4822 116 52257 | 22k        | 5% | 0.5W  |
| 3474 | 4822 116 52257 | 22k        | 5% | 0.5W  |
| 3475 | 4822 116 52224 | 470R       | 5% | 0.5W  |
| 3476 | 4822 116 52224 | 470R       | 5% | 0.5W  |
| 3477 | 4822 116 52256 | 2k2        | 5% | 0.16W |
| 3478 | 4822 116 52283 | 4k7        | 5% | 0.5W  |
| 3480 | 4822 102 10414 | Pot 2x20kΩ |    |       |
| 3481 | 4822 101 21102 | Pot 2x 50k |    |       |
| 3482 | 4822 101 21102 | Pot 2x 50k |    |       |
| 3483 | 4822 101 21102 | Pot 2x 50k |    |       |
| 3484 | 4822 101 21102 | Pot 2x 50k |    |       |
| 3485 | 4822 101 21102 | Pot 2x 50k |    |       |
| 3486 | 4822 050 11002 | 1k         | 5% | 0.2W  |
| 3487 | 4822 050 11002 | 1k         | 5% | 0.2W  |
| 3488 | 4822 050 11002 | 1k         | 5% | 0.2W  |
| 3489 | 4822 050 11002 | 1k         | 5% | 0.2W  |
| 3490 | 4822 116 52215 | 220R       | 5% | 0.16W |
| 3491 | 4822 116 52233 | 10k        | 5% | 0.5W  |
| 3492 | 4822 116 52228 | 680R       | 5% | 0.5W  |
| 3493 | 4822 116 52215 | 220R       | 5% | 0.16W |
| 3494 | 4822 116 52215 | 220R       | 5% | 0.16W |

## RESISTORS

|      |                |      |    |       |
|------|----------------|------|----|-------|
| 3495 | 4822 116 52215 | 220R | 5% | 0.16W |
| 3496 | 4822 116 52215 | 220R | 5% | 0.16W |
| 3497 | 4822 116 52257 | 22k  | 5% | 0.5W  |
| 3498 | 4822 116 52233 | 10k  | 5% | 0.5W  |
| 3499 | 4822 116 52215 | 220R | 5% | 0.16W |
| 3500 | 4822 116 52217 | 270R | 5% | 0.5W  |
| 3501 | 4822 116 52269 | 3k3  | 5% | 0.5W  |
| 3502 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3503 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3504 | 4822 116 52269 | 3k3  | 5% | 0.5W  |
| 3505 | 4822 116 52251 | 18k  | 5% | 0.5W  |
| 3506 | 4822 116 52175 | 100R | 5% | 0.5W  |
| 3507 | 4822 116 52217 | 270R | 5% | 0.5W  |
| 3508 | 4822 116 52217 | 270R | 5% | 0.5W  |
| 3516 | 4822 116 52233 | 10k  | 5% | 0.5W  |
| 3517 | 4822 116 52233 | 10k  | 5% | 0.5W  |
| 3526 | 4822 116 52228 | 680R | 5% | 0.5W  |
| 3528 | 4822 116 52304 | 82k  | 5% | 0.5W  |
| 3530 | 4822 116 52233 | 10k  | 5% | 0.5W  |
| 3531 | 4822 116 52283 | 4k7  | 5% | 0.5W  |
| 3532 | 4822 116 52283 | 4k7  | 5% | 0.5W  |
| 3533 | 4822 116 52283 | 4k7  | 5% | 0.5W  |
| 3534 | 4822 116 52283 | 4k7  | 5% | 0.5W  |
| 3535 | 4822 116 52283 | 4k7  | 5% | 0.5W  |
| 3536 | 4822 116 52283 | 4k7  | 5% | 0.5W  |
| 3537 | 4822 116 52217 | 270R | 5% | 0.5W  |
| 3538 | 4822 116 52217 | 270R | 5% | 0.5W  |
| 3539 | 4822 116 52217 | 270R | 5% | 0.5W  |
| 3540 | 4822 116 52258 | 220k | 5% | 0.5W  |
| 3552 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3554 | 4822 116 52233 | 10k  | 5% | 0.5W  |
| 3555 | 4822 116 52233 | 10k  | 5% | 0.5W  |
| 3556 | 4822 116 52233 | 10k  | 5% | 0.5W  |
| 3557 | 4822 116 52233 | 10k  | 5% | 0.5W  |
| 3558 | 4822 116 52256 | 2k2  | 5% | 0.16W |
| 3559 | 4822 116 52256 | 2k2  | 5% | 0.16W |
| 3560 | 4822 116 52283 | 4k7  | 5% | 0.5W  |
| 3562 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3563 | 4822 116 52233 | 10k  | 5% | 0.5W  |
| 3564 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3565 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3568 | 4822 116 52233 | 10k  | 5% | 0.5W  |
| 3573 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3574 | 4822 116 52284 | 47k  | 5% | 0.5W  |
| 3575 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3576 | 4822 051 10333 | 33k  | 2% | 0.25W |
| 3577 | 4822 116 52233 | 10k  | 5% | 0.5W  |
| 3578 | 4822 116 52233 | 10k  | 5% | 0.5W  |
| 3579 | 4822 116 52233 | 10k  | 5% | 0.5W  |
| 3580 | 4822 116 52233 | 10k  | 5% | 0.5W  |
| 3581 | 4822 116 52233 | 10k  | 5% | 0.5W  |
| 3585 | 4822 116 52249 | 1k8  | 5% | 0.16W |
| 3586 | 4822 116 52175 | 100R | 5% | 0.5W  |
| 3587 | 4822 116 52175 | 100R | 5% | 0.5W  |
| 3589 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3590 | 4822 116 52257 | 22k  | 5% | 0.5W  |
| 3591 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3592 | 4822 116 52257 | 22k  | 5% | 0.5W  |
| 3593 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3594 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3595 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3596 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3597 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3598 | 4822 116 52256 | 2k2  | 5% | 0.16W |
| 3601 | 4822 116 52224 | 470R | 5% | 0.5W  |

## RESISTORS

|      |                |      |    |       |
|------|----------------|------|----|-------|
| 3602 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3603 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3604 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3605 | 4822 116 52207 | 1k2  | 5% | 0.5W  |
| 3606 | 4822 116 52207 | 1k2  | 5% | 0.5W  |
| 3607 | 4822 116 52256 | 2k2  | 5% | 0.16W |
| 3608 | 4822 116 52256 | 2k2  | 5% | 0.16W |
| 3609 | 4822 116 52296 | 6k8  | 5% | 0.5W  |
| 3610 | 4822 116 52215 | 220R | 5% | 0.16W |
| 3612 | 4822 116 52256 | 2k2  | 5% | 0.16W |
| 3613 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3615 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3616 | 4822 116 52215 | 220R | 5% | 0.16W |
| 3617 | 4822 116 52228 | 680R | 5% | 0.5W  |
| 3618 | 4822 116 52233 | 10k  | 5% | 0.5W  |
| 3620 | 4822 116 52233 | 10k  | 5% | 0.5W  |
| 3621 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3622 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3623 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3624 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3649 | 4822 050 22205 | 2M2  | 1% | 0.6W  |
| 3650 | 4822 050 22205 | 2M2  | 1% | 0.6W  |
| 3651 | 4822 116 52257 | 22k  | 5% | 0.5W  |
| 3652 | 4822 116 52257 | 22k  | 5% | 0.5W  |
| 3653 | 4822 116 52235 | 1M   | 5% | 0.5W  |
| 3654 | 4822 116 52235 | 1M   | 5% | 0.5W  |
| 3655 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3660 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3661 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3662 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3663 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3664 | 4822 116 52228 | 680R | 5% | 0.5W  |
| 3665 | 4822 116 52256 | 2k2  | 5% | 0.16W |
| 3666 | 4822 116 52234 | 100k | 5% | 0.5W  |
| 3667 | 4822 116 52234 | 100k | 5% | 0.5W  |
| 3668 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3672 | 4822 050 11002 | 1k   | 5% | 0.2W  |

## CAPACITORS

|      |                |        |     |     |
|------|----------------|--------|-----|-----|
| 2401 | 4822 124 40239 | 0.47μF | 20% | 63V |
| 2402 | 4822 124 40239 | 0.47μF | 20% | 63V |
| 2403 | 4822 124 40239 | 0.47μF | 20% | 63V |
| 2404 | 4822 124 40239 | 0.47μF | 20% | 63V |
| 2405 | 4822 124 40239 | 0.47μF | 20% | 63V |
| 2406 | 4822 124 40239 | 0.47μF | 20% | 63V |
| 2407 | 4822 124 40239 | 0.47μF | 20% | 63V |
| 2408 | 4822 124 40239 | 0.47μF | 20% | 63V |
| 2409 | 4822 122 33848 | 47pF   | 5%  | 50V |
| 2410 | 4822 122 33848 | 47pF   | 5%  | 50V |
| 2411 | 4822 122 33848 | 47pF   | 5%  | 50V |
| 2412 | 4822 122 33848 | 47pF   | 5%  | 50V |
| 2413 | 4822 122 33848 | 47pF   | 5%  | 50V |
| 2414 | 4822 122 33848 | 47pF   | 5%  | 50V |
| 2415 | 4822 122 33848 | 47pF   | 5%  | 50V |
| 2416 | 4822 122 33848 | 47pF   | 5%  | 50V |
| 2417 | 4822 126 12702 | 270pF  | 10% | 50V |
| 2418 | 4822 126 12702 | 270pF  | 10% | 50V |
| 2419 | 4822 122 33195 | 100pF  | 10% | 50V |
| 2420 | 4822 122 33195 | 100pF  | 10% | 50V |
| 2421 | 4822 122 33848 | 47pF   | 5%  | 50V |
| 2422 | 4822 122 33848 | 47pF   | 5%  | 50V |
| 2425 | 4822 122 33195 | 100pF  | 10% | 50V |
| 2426 | 4822 122 33195 | 100pF  | 10% | 50V |
| 2427 | 4822 124 40242 | 1μF    | 20% | 63V |



## CAPACITORS

|      |                |        |     |      |
|------|----------------|--------|-----|------|
| 2428 | 4822 124 40242 | 1μF    | 20% | 63V  |
| 2429 | 4822 126 12702 | 270pF  | 10% | 50V  |
| 2430 | 4822 126 12702 | 270pF  | 10% | 50V  |
| 2431 | 4822 122 33197 | 1nF    | 10% | 50V  |
| 2432 | 4822 122 33197 | 1nF    | 10% | 50V  |
| 2433 | 4822 122 33197 | 1nF    | 10% | 50V  |
| 2434 | 4822 122 33197 | 1nF    | 10% | 50V  |
| 2435 | 4822 126 11714 | 4.7nF  | 20% |      |
| 2436 | 4822 126 11714 | 4.7nF  | 20% |      |
| 2437 | 4822 126 11714 | 4.7nF  | 20% |      |
| 2438 | 4822 126 11714 | 4.7nF  | 20% |      |
| 2439 | 4822 126 11585 | 22nF   |     | 50V  |
| 2440 | 4822 126 11585 | 22nF   |     | 50V  |
| 2441 | 4822 126 11585 | 22nF   |     | 50V  |
| 2442 | 4822 126 11585 | 22nF   |     | 50V  |
| 2443 | 4822 121 43526 | 47nF   | 5%  | 100V |
| 2444 | 4822 121 43526 | 47nF   | 5%  | 100V |
| 2445 | 4822 121 42408 | 220nF  | 5%  | 63V  |
| 2446 | 4822 121 42408 | 220nF  | 5%  | 63V  |
| 2449 | 4822 122 33195 | 100pF  | 10% | 50V  |
| 2450 | 4822 122 33195 | 100pF  | 10% | 50V  |
| 2451 | 4822 124 40246 | 4.7uF  | 20% | 63V  |
| 2452 | 4822 124 40246 | 4.7uF  | 20% | 63V  |
| 2453 | 4822 121 51387 | 10nF   | 20% | 16V  |
| 2454 | 4822 121 51387 | 10nF   | 20% | 16V  |
| 2455 | 4822 122 33192 | 27pF   | 5%  | 50V  |
| 2456 | 4822 122 33192 | 27pF   | 5%  | 50V  |
| 2460 | 4822 124 40239 | 0.47μF | 20% | 63V  |
| 2461 | 4822 126 11585 | 22nF   |     | 50V  |
| 2462 | 4822 126 11585 | 22nF   |     | 50V  |
| 2463 | 4822 126 11585 | 22nF   |     | 50V  |
| 2464 | 4822 124 41525 | 100μF  | 20% | 25V  |
| 2465 | 4822 124 22263 | 220μF  | 20% | 25V  |
| 2466 | 4822 124 40248 | 10μF   | 20% | 63V  |
| 2468 | 4822 124 40248 | 10μF   | 20% | 63V  |
| 2469 | 4822 124 40242 | 1μF    | 20% | 63V  |
| 2470 | 4822 124 40242 | 1μF    | 20% | 63V  |
| 2471 | 4822 122 33519 | 470pF  | 10% | 50V  |
| 2472 | 4822 122 33519 | 470pF  | 10% | 50V  |
| 2473 | 4822 124 40433 | 47μF   | 20% | 25V  |
| 2475 | 4822 124 22263 | 220μF  | 20% | 25V  |
| 2476 | 4822 124 41525 | 100μF  | 20% | 25V  |
| 2477 | 4822 124 40433 | 47μF   | 20% | 25V  |
| 2483 | 4822 122 33197 | 1nF    | 10% | 50V  |
| 2484 | 4822 122 33197 | 1nF    | 10% | 50V  |
| 2502 | 4822 124 41525 | 100μF  | 20% | 25V  |
| 2503 | 4822 124 41525 | 100μF  | 20% | 25V  |
| 2504 | 5322 124 21643 | 22μF   | 20% | 40V  |
| 2505 | 4822 126 11585 | 22nF   |     | 50V  |
| 2507 | 4822 126 12702 | 270pF  | 10% | 50V  |
| 2510 | 4822 122 33848 | 47pF   | 5%  | 50V  |
| 2512 | 4822 124 40242 | 1μF    | 20% | 63V  |
| 2513 | 4822 124 40248 | 10μF   | 20% | 63V  |
| 2514 | 4822 126 12702 | 270pF  | 10% | 50V  |
| 2552 | 4822 122 33197 | 1nF    | 10% | 50V  |
| 2553 | 4822 122 33197 | 1nF    | 10% | 50V  |
| 2554 | 4822 122 33197 | 1nF    | 10% | 50V  |
| 2555 | 4822 122 33197 | 1nF    | 10% | 50V  |
| 2556 | 4822 122 33195 | 100pF  | 10% | 50V  |
| 2557 | 4822 122 33195 | 100pF  | 10% | 50V  |
| 2558 | 5322 121 42386 | 100nF  | 5%  | 63V  |

## RECORDER BOARD

## DIODES

|      |                |        |
|------|----------------|--------|
| 6701 | 4822 130 30621 | 1N4148 |
| 6702 | 4822 130 30621 | 1N4148 |
| 6704 | 4822 130 30621 | 1N4148 |
| 6705 | 4822 130 30621 | 1N4148 |
| 6706 | 4822 130 30621 | 1N4148 |
| 6707 | 4822 130 30621 | 1N4148 |
| 6710 | 4822 130 30621 | 1N4148 |
| 6712 | 4822 130 30621 | 1N4148 |

## TRANSISTORS

|      |                |          |
|------|----------------|----------|
| 7703 | 4822 130 40937 | BC548B   |
| 7704 | 4822 130 40937 | BC548B   |
| 7705 | 4822 130 40937 | BC548B   |
| 7706 | 5322 130 44779 | BC338-40 |
| 7707 | 5322 130 44779 | BC338-40 |
| 7708 | 4822 130 44197 | BC558B   |
| 7709 | 4822 130 40937 | BC548B   |
| 7712 | 4822 130 44196 | BC548C   |
| 7713 | 4822 130 44197 | BC558B   |
| 7753 | 4822 130 40937 | BC548B   |
| 7756 | 5322 130 44779 | BC338-40 |
| 7757 | 5322 130 44779 | BC338-40 |

## INTEGRATED CIRCUITS

|      |                |           |
|------|----------------|-----------|
| 7701 | 4822 209 72491 | KA2224    |
| 7702 | 4822 209 70288 | UPC1313HA |

## COILS

|      |                |       |
|------|----------------|-------|
| 5701 | 4822 157 51238 | 820μH |
| 5702 | 4822 157 51238 | 820μH |

## RESISTORS

|      |                |      |    |       |
|------|----------------|------|----|-------|
| 3701 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3702 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3703 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3704 | 4822 116 52258 | 220k | 5% | 0.5W  |
| 3705 | 4822 116 52188 | 27R  | 5% | 0.5W  |
| 3706 | 4822 116 52175 | 100R | 5% | 0.5W  |
| 3709 | 4822 116 52175 | 100R | 5% | 0.5W  |
| 3710 | 4822 116 52289 | 5k6  | 5% | 0.16W |
| 3711 | 4822 116 52234 | 100k | 5% | 0.5W  |
| 3712 | 4822 116 52251 | 18k  | 5% | 0.5W  |
| 3713 | 4822 116 52296 | 6k8  | 5% | 0.5W  |
| 3715 | 4822 116 52257 | 22k  | 5% | 0.5W  |
| 3716 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3717 | 4822 116 52256 | 2k2  | 5% | 0.16W |
| 3718 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3719 | 4822 116 52257 | 22k  | 5% | 0.5W  |
| 3720 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3721 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3722 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3723 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3724 | 4822 116 52258 | 220k | 5% | 0.5W  |
| 3725 | 4822 116 52175 | 100R | 5% | 0.5W  |
| 3727 | 4822 050 22205 | 2M2  | 1% | 0.6W  |
| 3730 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3731 | 4822 116 52207 | 1k2  | 5% | 0.5W  |

## RESISTORS

|      |                |      |    |       |
|------|----------------|------|----|-------|
| 3732 | 4822 116 52233 | 10k  | 5% | 0.5W  |
| 3733 | 4822 116 52207 | 1k2  | 5% | 0.5W  |
| 3734 | 4822 116 52233 | 10k  | 5% | 0.5W  |
| 3735 | 4822 116 52238 | 12k  | 5% | 0.5W  |
| 3736 | 4822 116 52264 | 27k  | 5% | 0.5W  |
| 3737 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3738 | 4822 116 52257 | 22k  | 5% | 0.5W  |
| 3739 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3741 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3742 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3743 | 4822 116 52257 | 22k  | 5% | 0.5W  |
| 3744 | 4822 116 52258 | 220k | 5% | 0.5W  |
| 3745 | 4822 116 52234 | 100k | 5% | 0.5W  |
| 3746 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3747 | 4822 116 52234 | 100k | 5% | 0.5W  |
| 3749 | 4822 116 52283 | 4k7  | 5% | 0.5W  |
| 3751 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3752 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3753 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3754 | 4822 116 52258 | 220k | 5% | 0.5W  |
| 3755 | 4822 116 52188 | 27R  | 5% | 0.5W  |
| 3756 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3760 | 4822 116 52289 | 5k6  | 5% | 0.16W |
| 3761 | 4822 116 52234 | 100k | 5% | 0.5W  |
| 3763 | 4822 116 52296 | 6k8  | 5% | 0.5W  |
| 3765 | 4822 116 52257 | 22k  | 5% | 0.5W  |
| 3766 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3767 | 4822 116 52256 | 2k2  | 5% | 0.16W |
| 3768 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3769 | 4822 116 52257 | 22k  | 5% | 0.5W  |
| 3770 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3771 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3772 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3773 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3774 | 4822 116 52258 | 220k | 5% | 0.5W  |
| 3775 | 4822 116 52175 | 100R | 5% | 0.5W  |
| 3778 | 4822 052 10189 | 18R  | 5% | 0.33W |
| 3779 | 4822 116 52298 | 680k | 5% | 0.5W  |
| 3780 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3781 | 4822 116 52207 | 1k2  | 5% | 0.5W  |
| 3782 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3783 | 4822 116 52258 | 220k | 5% | 0.5W  |
| 3785 | 4822 116 52238 | 12k  | 5% | 0.5W  |
| 3786 | 4822 116 52264 | 27k  | 5% | 0.5W  |
| 3788 | 4822 116 52257 | 22k  | 5% | 0.5W  |
| 3789 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3791 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3792 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3796 | 4822 116 52257 | 22k  | 5% | 0.5W  |
| 3797 | 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3798 | 4822 116 52231 | 820R | 5% | 0.5W  |
| 3799 | 4822 116 52234 | 100k | 5% | 0.5W  |

## CAPACITORS

|      |                |        |     |      |
|------|----------------|--------|-----|------|
| 2713 | 4822 124 40433 | 47μF   | 20% | 25V  |
| 2720 | 4822 122 10174 | 1.5nF  | 10% | 50V  |
| 2721 | 4822 122 33534 | 1.2nF  | 10% | 50V  |
| 2722 | 4822 124 22466 | 1μF    | 20% | 50V  |
| 2723 | 4822 124 22633 | 22μF   | 20% | 35V  |
| 2724 | 4822 126 11595 | 470pF  | 10% | 50V  |
| 2725 | 4822 124 40433 | 47μF   | 20% | 25V  |
| 2726 | 4822 124 40433 | 47μF   | 20% | 25V  |
| 2728 | 4822 124 40435 | 10μF   | 20% | 50V  |
| 2730 | 4822 126 11325 | 4.7nF  | 10% | 50V  |
| 2731 | 4822 121 41857 | 10nF   | 5%  | 250V |
| 2732 | 4822 122 10158 | 1nF    | 10% | 50V  |
| 2751 | 4822 122 10173 | 820pF  | 10% | 50V  |
| 2753 | 4822 124 41643 | 100μF  | 20% | 16V  |
| 2754 | 4822 126 11595 | 470pF  | 10% | 50V  |
| 2758 | 4822 124 40435 | 10μF   | 20% | 50V  |
| 2759 | 4822 121 41857 | 10nF   | 5%  | 250V |
| 2762 | 4822 126 11311 | 4.7nF  | 50V |      |
| 2770 | 4822 122 10174 | 1.5nF  | 10% | 50V  |
| 2771 | 4822 122 33534 | 1.2nF  | 10% | 50V  |
| 2772 | 4822 124 22466 | 1μF    | 20% | 50V  |
| 2773 | 4822 124 22633 | 22μF   | 20% | 35V  |
| 2774 | 4822 126 11595 | 470pF  | 10% | 50V  |
| 2775 | 4822 124 40184 | 1000μF | 20% | 10V  |
| 2778 | 4822 124 40435 | 10μF   | 20% | 50V  |
| 2781 | 4822 121 41857 | 10nF   | 5%  | 250V |
| 2782 | 4822 122 10158 | 1nF    | 10% | 50V  |
| 2783 | 4822 121 41935 | 12nF   | 5%  | 250V |
| 2784 | 4822 124 40242 | 1μF    | 20% | 63V  |
| 2785 | 4822 121 51305 | 15nF   | 10% | 50V  |
| 2786 | 4822 122 10183 | 100pF  | 5%  | 50V  |
| 2788 | 4822 124 40433 | 47μF   | 20% | 25V  |
| 2789 | 4822 124 40433 | 47μF   | 20% | 25V  |
| 2790 | 4822 124 40433 | 47μF   | 20% | 25V  |
| 2791 | 4822 124 22263 | 220μF  | 20% | 25V  |

## CAPACITORS

|      |                |       |     |      |
|------|----------------|-------|-----|------|
| 2701 | 4822 122 10173 | 820pF | 10% | 50V  |
| 2702 | 4822 122 10182 | 100pF | 5%  | 50V  |
| 2703 | 4822 124 41643 | 100μF | 20% | 16V  |
| 2704 | 4822 126 11595 | 470pF | 10% | 50V  |
| 2705 | 4822 126 11325 | 4.7nF | 10% | 50V  |
| 2706 | 4822 124 40433 | 47μF  | 20% | 25V  |
| 2708 | 4822 124 40435 | 10μF  | 20% | 50V  |
| 2709 | 4822 121 41857 | 10nF  | 5%  | 250V |
| 2711 | 4822 124 22633 | 22μF  | 20% | 35V  |
| 2712 | 4822 126 11311 | 4.7nF |     | 50V  |

# POWER BOARD

## MECHANICAL PARTS

|                |            |
|----------------|------------|
| 4822 255 40128 | CLIP TO126 |
| 5322 255 40397 | CLIP IC    |

## MISCELLANEOUS

|                     |                    |
|---------------------|--------------------|
| 1304 4822 267 31176 | SPEAKER TERMINAL   |
| 1305 4822 264 30175 | SOCKET EXT. SUPPLY |

## DIODES

|                     |            |
|---------------------|------------|
| 6250 4822 130 82079 | D3SBA20    |
| 6251 4822 130 30621 | 1N4148     |
| 6252 4822 130 30621 | 1N4148     |
| 6253 4822 130 34174 | BZX79-C4V7 |
| 6254 4822 130 30621 | 1N4148     |
| 6255 5322 130 30684 | 1N4002     |
| 6256 5322 130 30684 | 1N4002     |
| 6257 5322 130 30684 | 1N4002     |
| 6258 5322 130 30684 | 1N4002     |
| 6259 4822 130 30621 | 1N4148     |
| 6261 5322 130 30684 | 1N4002     |
| 6350 4822 130 30621 | 1N4148     |
| 6351 4822 130 30621 | 1N4148     |
| 6352 4822 130 34278 | BZX79-C6V8 |
| 6354 4822 130 30621 | 1N4148     |

## TRANSISTORS

|                     |          |
|---------------------|----------|
| 7250 4822 130 40937 | BC548B   |
| 7252 4822 130 61236 | BD234    |
| 7253 4822 130 40937 | BC548B   |
| 7254 4822 130 40937 | BC548B   |
| 7255 4822 130 44197 | BC558B   |
| 7309 4822 130 41344 | BC337-40 |
| 7310 4822 130 41344 | BC337-40 |
| 7311 4822 130 41344 | BC337-40 |
| 7312 4822 130 41344 | BC337-40 |
| 7350 4822 130 41344 | BC337-40 |
| 7351 4822 130 40937 | BC548B   |
| 7352 4822 130 40937 | BC548B   |

## INTEGRATED CIRCUITS

|                     |             |
|---------------------|-------------|
| 7313 4822 209 73356 | AN7161N(FP) |
| 7314 4822 209 73356 | AN7161J(FP) |

## COILS

|                     |            |
|---------------------|------------|
| 5309 4822 157 62552 | COIL 2.2μH |
| 5310 4822 157 62552 | COIL 2.2μH |
| 5311 4822 157 62552 | COIL 2.2μH |
| 5312 4822 157 62552 | COIL 2.2μH |
| 5315 4822 157 62552 | COIL 2.2μH |
| 5316 4822 157 62552 | COIL 2.2μH |

## RESISTORS

|                     |     |    |       |
|---------------------|-----|----|-------|
| 3250 4822 050 11002 | 1k  | 5% | 0.2W  |
| 3251 4822 116 52233 | 10k | 5% | 0.5W  |
| 3252 4822 116 52233 | 10k | 5% | 0.5W  |
| 3254 4822 051 10333 | 33k | 2% | 0.25W |
| 3255 4822 050 11002 | 1k  | 5% | 0.2W  |
| 3256 4822 050 11002 | 1k  | 5% | 0.2W  |
| 3257 4822 116 52233 | 10k | 5% | 0.5W  |
| 3258 4822 116 52283 | 4k7 | 5% | 0.5W  |
| 3259 4822 051 10333 | 33k | 2% | 0.25W |
| 3260 4822 116 52233 | 10k | 5% | 0.5W  |

## RESISTORS

|                     |      |    |       |
|---------------------|------|----|-------|
| 3261 4822 116 52291 | 56k  | 5% | 0.5W  |
| 3262 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3263 4822 116 52283 | 4k7  | 5% | 0.5W  |
| 3264 4822 116 52217 | 270R | 5% | 0.5W  |
| 3307 4822 116 52256 | 2k2  | 5% | 0.16W |
| 3308 4822 116 52256 | 2k2  | 5% | 0.16W |
| 3309 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3310 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3311 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3312 4822 050 11002 | 1k   | 5% | 0.2W  |
| 3313 4822 116 52256 | 2k2  | 5% | 0.16W |
| 3314 4822 116 52256 | 2k2  | 5% | 0.16W |
| 3315 4822 116 52257 | 22k  | 5% | 0.5W  |
| 3316 4822 116 52257 | 22k  | 5% | 0.5W  |
| 3317 4822 116 52217 | 270R | 5% | 0.5W  |
| 3318 4822 116 52217 | 270R | 5% | 0.5W  |
| 3318 4822 116 52215 | 220R | 5% | 0.16W |
| 3319 4822 052 10228 | 2R2  | 5% | 0.33W |
| 3320 4822 052 10228 | 2R2  | 5% | 0.33W |
| 3321 4822 052 10228 | 2R2  | 5% | 0.33W |
| 3322 4822 052 10228 | 2R2  | 5% | 0.33W |
| 3323 4822 116 52175 | 100R | 5% | 0.5W  |
| 3324 4822 116 52175 | 100R | 5% | 0.5W  |
| 3325 4822 116 52175 | 100R | 5% | 0.5W  |
| 3326 4822 116 52175 | 100R | 5% | 0.5W  |
| 3350 4822 052 10479 | 47R  | 5% | 0.3W  |
| 3351 4822 116 52276 | 3k9  | 5% | 0.5W  |
| 3352 4822 116 52233 | 10k  | 5% | 0.5W  |
| 3353 4822 116 52233 | 10k  | 5% | 0.5W  |
| 3354 4822 116 52234 | 100k | 5% | 0.5W  |
| 3355 4822 116 52217 | 270R | 5% | 0.5W  |

## CAPACITORS

|                     |        |     |      |
|---------------------|--------|-----|------|
| 2250 5322 121 42578 | 100nF  | 10% | 100V |
| 2251 5322 121 42386 | 100nF  | 5%  | 63V  |
| 2252 5322 121 42386 | 100nF  | 5%  | 63V  |
| 2253 4822 124 42119 | 4700μF | 20% | 25V  |
| 2254 4822 124 40242 | 1μF    | 20% | 63V  |
| 2255 4822 122 33197 | 1nF    | 10% | 50V  |
| 2256 4822 126 11585 | 22nF   | 50V |      |
| 2257 5322 121 42578 | 100nF  | 10% | 100V |
| 2258 5322 121 42386 | 100nF  | 5%  | 63V  |
| 2259 5322 121 42386 | 100nF  | 5%  | 63V  |
| 2260 4822 124 22412 | 2200μF | 20% | 16V  |
| 2261 4822 124 40201 | 1000μF | 20% | 16V  |
| 2262 4822 124 41525 | 100μF  | 20% | 25V  |
| 2265 4822 124 41994 | 3300μF | 20% | 16V  |
| 2266 4822 122 33197 | 1nF    | 10% | 50V  |
| 2267 4822 122 33197 | 1nF    | 10% | 50V  |
| 2311 4822 124 40242 | 1μF    | 20% | 63V  |
| 2312 4822 124 40242 | 1μF    | 20% | 63V  |
| 2315 5322 121 42489 | 33nF   | 5%  | 100V |
| 2316 5322 121 42489 | 33nF   | 5%  | 100V |
| 2317 4822 124 40242 | 1μF    | 20% | 63V  |
| 2318 4822 124 40242 | 1μF    | 20% | 63V  |
| 2319 4822 124 40433 | 47μF   | 20% | 25V  |
| 2320 4822 124 40433 | 47μF   | 20% | 25V  |
| 2321 4822 122 33169 | 680pF  | 10% | 50V  |

## CAPACITORS

|      |                |       |     |     |
|------|----------------|-------|-----|-----|
| 2322 | 4822 122 33169 | 680pF | 10% | 50V |
| 2323 | 5322 122 32777 | 1.8nF | 10% | 50V |
| 2324 | 5322 122 32777 | 1.8nF | 10% | 50V |
| 2325 | 4822 124 40196 | 220μF | 20% | 16V |
| 2326 | 4822 124 40196 | 220μF | 20% | 16V |
|      |                |       |     |     |
| 2329 | 5322 124 41431 | 22μF  | 20% | 25V |
| 2330 | 5322 124 41431 | 22μF  | 20% | 25V |
| 2333 | 4822 124 40433 | 47μF  | 20% | 25V |
| 2334 | 4822 124 40433 | 47μF  | 20% | 25V |
| 2335 | 4822 124 40433 | 47μF  | 20% | 25V |
|      |                |       |     |     |
| 2336 | 4822 124 40433 | 47μF  | 20% | 25V |
| 2337 | 4822 121 42408 | 220nF | 5%  | 63V |
| 2338 | 4822 121 42408 | 220nF | 5%  | 63V |
| 2339 | 4822 121 42408 | 220nF | 5%  | 63V |
| 2340 | 4822 121 42408 | 220nF | 5%  | 63V |
|      |                |       |     |     |
| 2350 | 4822 124 41525 | 100μF | 20% | 25V |
| 2351 | 5322 121 42386 | 100nF | 5%  | 63V |
| 2352 | 5322 121 42386 | 100nF | 5%  | 63V |
| 2353 | 5322 121 42386 | 100nF | 5%  | 63V |
| 2354 | 4822 124 40242 | 1μF   | 20% | 63V |
|      |                |       |     |     |
| 2355 | 4822 126 12705 | 47pF  | 5%  | 50V |
| 2356 | 4822 126 12705 | 47pF  | 5%  | 50V |
| 2357 | 4822 124 40435 | 10μF  | 20% | 50V |
| 2361 | 4822 122 10177 | 10nF  | 20% | 25V |
| 2362 | 4822 122 10177 | 10nF  | 20% | 25V |

## TRAFO BOARD

## MISCELLANEOUS

|                                                 |                |                           |
|-------------------------------------------------|----------------|---------------------------|
| 1250                                            | 4822 071 55002 | FUSE T5A                  |
| 1250                                            | 4822 252 51123 | FUSE T6.3A                |
| 1251                                            | 4822 071 56301 | Fuse T 630mA/250V         |
| 1252                                            | 4822 071 56301 | Fuse T 630mA/250V         |
| 1252                                            | 4822 253 30334 | FUSE T1.25A               |
|                                                 |                |                           |
| 1255                                            | 4822 265 31015 | MAINS SOCKET NOT FOR /37  |
| 1255                                            | 4822 265 31016 | MAINS SOCKET ONLY FOR /37 |
| 1260                                            | 4822 272 10269 | VOLTAGE SELECTOR          |
| Values for fuses see Circuit Diagram on page 39 |                |                           |
|                                                 |                |                           |
| 5250                                            | 4822 146 31239 | TRAFO /20, /22            |
| 5250                                            | 4822 146 31234 | TRAFO /37                 |
| 5250                                            | 4822 146 31235 | TRAFO AS445/21, /30       |
| 5250                                            | 4822 146 31235 | TRAFO AS445/21, /30       |
| 5250                                            | 4822 146 31254 | TRAFO /25                 |

## COILS

|      |                |                    |
|------|----------------|--------------------|
| 5251 | 4822 157 70003 | COIL, MAINS FILTER |
|------|----------------|--------------------|

## RESISTORS

|      |                |     |    |      |
|------|----------------|-----|----|------|
| 3298 | 4822 053 21106 | 10M | 5% | 0.5W |
|------|----------------|-----|----|------|

## ECO4 Tuner

## MISCELLANEOUS

|      |                |                     |
|------|----------------|---------------------|
| 1101 | 4822 267 10283 | SOCKET COAX IEC 75R |
| 1101 | 4822 265 20598 | F-CONNECT. COAX 75R |

## DIODES

|      |                |            |
|------|----------------|------------|
| 6105 | 4822 130 83075 | HN1V02H.   |
| 6109 | 4822 130 82833 | 1SV228     |
| 6122 | 4822 130 30621 | 1N4148     |
| 6121 | 4822 130 30621 | 1N4148     |
| 6123 | 4822 130 30621 | 1N4148     |
| 6124 | 4822 130 82833 | 1SV228     |
| 6140 | 4822 130 30621 | 1N4148     |
| 6154 | 4822 130 30621 | 1N4148     |
| 6174 | 4822 130 34233 | BZX79-B5V1 |

## TRANSISTORS

|      |                |              |
|------|----------------|--------------|
| 7102 | 5322 130 42136 | BC848C(CHIP) |
| 7104 | 5322 130 42136 | BC848C(CHIP) |
| 7105 | 4822 130 60093 | 2SA838B      |
| 7120 | 4822 130 60163 | 2SC1047      |
| 7121 | 5322 130 42136 | BC848C(CHIP) |
| 7123 | 5322 130 42136 | BC848C(CHIP) |
| 7128 | 5322 130 42136 | BC848C(CHIP) |
| 7152 | 5322 130 41983 | BC858B(CHIP) |
| 7156 | 4822 130 41344 | BC337-40     |
| 7157 | 4822 130 41344 | BC337-40     |
| 7169 | 5322 130 41983 | BC858B(CHIP) |
| 7170 | 5322 130 42136 | BC848C(CHIP) |
| 7171 | 5322 130 42136 | BC848C(CHIP) |
| 7174 | 5322 130 41983 | BC858B(CHIP) |
| 7178 | 5322 130 41983 | BC858B(CHIP) |
| 7179 | 5322 130 42136 | BC848C(CHIP) |

## INTEGRATED CIRCUITS

|      |                |                         |
|------|----------------|-------------------------|
| 7140 | 4822 209 32011 | TEA5712T/N1 (Radio-IC)  |
| 7150 | 5322 209 14482 | HEF4069UBT (6xINVERTER) |
| 7172 | 4822 209 30606 | MM74HCU04M (6xINVERTER) |
| 7173 | 4822 209 31998 | LC7218M SYNTHESIZER     |

## COILS

|      |                |                        |
|------|----------------|------------------------|
| 5105 | 4822 158 60641 | Ferrite ant.,MW/LW     |
| 5106 | 4822 158 60642 | Ferrite ant.,MW        |
| 5109 | 4822 156 30947 | RF COIL var. 1.5 TURNS |
| 5120 | 4822 156 30947 | RF COIL var. 1.5 TURNS |
| 5122 | 4822 157 60517 | COIL var. 110µH 8%     |
| 5123 | 4822 157 60517 | COIL var. 110µH 8%     |
| 5140 | 4822 158 60511 | AM-IF FILTER 450kHz    |
| 5142 | 4822 157 70302 | AM-IF FILTER 450kHz    |
| 5143 | 4822 242 70665 | CER. FILTER 10.7MHZ    |
| 5144 | 4822 242 70665 | CER. FILTER 10.7MHZ    |
| 5145 | 4822 242 81362 | CER. DISCRIMINATOR     |
| 5150 | 4822 157 50975 | 1mH 10%                |
| 5170 | 4822 242 72976 | CER.RESONATOR 7.2MHZ   |
| 5171 | 4822 157 50963 | 2.2µH                  |

## RESISTORS

|      |                |      |    |       |
|------|----------------|------|----|-------|
| 3119 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3120 | 4822 116 52289 | 5k6  | 5% | 0.16W |
| 3124 | 4822 116 52256 | 2k2  | 5% | 0.16W |
| 3132 | 4822 116 52283 | 4k7  | 5% | 0.5W  |
| 3141 | 4822 116 52215 | 220R | 5% | 0.16W |

|      |                |                   |    |       |
|------|----------------|-------------------|----|-------|
| 3148 | 4822 100 11682 | POTMETER 47k LIN. |    |       |
| 3151 | 4822 116 52243 | 1k5               | 5% | 0.16W |
| 3156 | 4822 116 52233 | 10k               | 5% | 0.5W  |
| 3162 | 4822 050 11002 | 1k                | 5% | 0.2W  |
| 3163 | 4822 050 11002 | 1k                | 5% | 0.2W  |

|      |                |     |    |      |
|------|----------------|-----|----|------|
| 3164 | 4822 116 52283 | 4k7 | 5% | 0.5W |
| 3165 | 4822 116 52283 | 4k7 | 5% | 0.5W |
| 3170 | 4822 116 52283 | 4k7 | 5% | 0.5W |
| 3173 | 4822 116 52244 | 15k | 5% | 0.5W |
| 3174 | 4822 116 52233 | 10k | 5% | 0.5W |

|      |                |      |    |       |
|------|----------------|------|----|-------|
| 3177 | 4822 116 52233 | 10k  | 5% | 0.5W  |
| 3181 | 4822 116 52234 | 100k | 5% | 0.5W  |
| 3189 | 4822 116 52249 | 1k8  | 5% | 0.16W |
| 3190 | 4822 116 52249 | 1k8  | 5% | 0.16W |
| 3191 | 4822 116 52249 | 1k8  | 5% | 0.16W |

|      |                |      |    |       |
|------|----------------|------|----|-------|
| 3192 | 4822 116 52249 | 1k8  | 5% | 0.16W |
| 3193 | 4822 116 52224 | 470R | 5% | 0.5W  |
| 3194 | 4822 050 24701 | 470R | 5% |       |
| 3195 | 4822 050 24701 | 470R | 5% |       |
| 3197 | 4822 050 24701 | 470R | 5% |       |

## CHIP RESISTORS

|      |                |      |    |      |
|------|----------------|------|----|------|
| 3106 | 4822 051 20104 | 100k | 5% | 0.1W |
| 3107 | 4822 051 20222 | 2k2  | 5% | 0.1W |
| 3108 | 4822 051 20104 | 100k | 5% | 0.1W |
| 3109 | 4822 051 20222 | 2k2  | 5% | 0.1W |
| 3110 | 4822 051 20473 | 47k  | 5% | 0.1W |
| 3111 | 4822 051 20153 | 15k  | 5% | 0.1W |
| 3112 | 4822 051 20223 | 22k  | 5% | 0.1W |
| 3116 | 4822 051 20335 | 3M3  | 5% | 0.1W |
| 3121 | 4822 051 20104 | 100k | 5% | 0.1W |
| 3122 | 4822 051 20471 | 470R | 5% | 0.1W |

|      |                |     |    |      |
|------|----------------|-----|----|------|
| 3123 | 4822 051 20223 | 22k | 5% | 0.1W |
| 3125 | 4822 051 20472 | 4k7 | 5% | 0.1W |
| 3128 | 4822 051 20222 | 2k2 | 5% | 0.1W |
| 3129 | 4822 051 20472 | 4k7 | 5% | 0.1W |
| 3142 | 4822 051 20222 | 2k2 | 5% | 0.1W |

|      |                |      |    |      |
|------|----------------|------|----|------|
| 3144 | 4822 051 20473 | 47k  | 5% | 0.1W |
| 3147 | 4822 051 20184 | 180k | 5% | 0.1W |
| 3149 | 4822 051 20683 | 68k  | 5% | 0.1W |
| 3154 | 4822 051 20333 | 33k  | 5% | 0.1W |
| 3155 | 4822 051 20333 | 33k  | 5% | 0.1W |

|      |                |      |    |      |
|------|----------------|------|----|------|
| 3157 | 4822 051 20473 | 47k  | 5% | 0.1W |
| 3158 | 4822 051 20189 | 18R  | 5% | 0.1W |
| 3160 | 4822 051 20823 | 82k  | 5% | 0.1W |
| 3161 | 4822 051 20823 | 82k  | 5% | 0.1W |
| 3166 | 4822 051 20101 | 100R | 5% | 0.1W |

|      |                |                  |    |      |  |
|------|----------------|------------------|----|------|--|
| 3167 | 4822 051 20008 | CHIP JUMPER 0805 |    |      |  |
| 3171 | 4822 051 20101 | 100R             | 5% | 0.1W |  |
| 3172 | 4822 051 20472 | 4k7              | 5% | 0.1W |  |
| 3175 | 4822 051 20104 | 100k             | 5% | 0.1W |  |
| 3176 | 4822 051 20104 | 100k             | 5% | 0.1W |  |

|      |                |      |    |      |
|------|----------------|------|----|------|
| 3178 | 4822 051 20104 | 100k | 5% | 0.1W |
| 3179 | 4822 051 20223 | 22k  | 5% | 0.1W |
| 3180 | 4822 051 20104 | 100k | 5% | 0.1W |
| 3183 | 4822 051 20223 | 22k  | 5% | 0.1W |
| 3184 | 4822 051 20223 | 22k  | 5% | 0.1W |

## CHIP RESISTORS

|      |                |                  |    |       |
|------|----------------|------------------|----|-------|
| 3185 | 4822 051 20104 | 100k             | 5% | 0.1W  |
| 3186 | 4822 051 20104 | 100k             | 5% | 0.1W  |
| 3188 | 4822 051 10102 | 1k               | 2% | 0.25W |
| 3211 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |
| 3212 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |
| 3213 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |
| 3220 | 4822 051 20008 | CHIP JUMPER 0805 |    |       |
| 3222 | 4822 051 20008 | CHIP JUMPER 0805 |    |       |
| 3222 | 4822 051 20008 | CHIP JUMPER 0805 |    |       |
| 3223 | 4822 051 20008 | CHIP JUMPER 0805 |    |       |
| 3224 | 4822 051 20008 | CHIP JUMPER 0805 |    |       |
| 3226 | 4822 051 20008 | CHIP JUMPER 0805 |    |       |
| 3226 | 4822 051 20008 | CHIP JUMPER 0805 |    |       |
| 3228 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |
| 3229 | 4822 051 20008 | CHIP JUMPER 0805 |    |       |
| 3229 | 4822 051 20008 | CHIP JUMPER 0805 |    |       |
| 3233 | 4822 051 20008 | CHIP JUMPER 0805 |    |       |
| 3237 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |
| 3238 | 4822 051 20008 | CHIP JUMPER 0805 |    |       |
| 3240 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |
| 3241 | 4822 051 20008 | CHIP JUMPER 0805 |    |       |
| 3241 | 4822 051 20008 | CHIP JUMPER 0805 |    |       |
| 3242 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |
| 3243 | 4822 051 20008 | CHIP JUMPER 0805 |    |       |
| 3243 | 4822 051 20008 | CHIP JUMPER 0805 |    |       |
| 3244 | 4822 051 20008 | CHIP JUMPER 0805 |    |       |
| 3245 | 4822 051 20008 | CHIP JUMPER 0805 |    |       |
| 3245 | 4822 051 20008 | CHIP JUMPER 0805 |    |       |
| 3246 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |
| 3247 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |
| 3248 | 4822 051 20008 | CHIP JUMPER 0805 |    |       |
| 3249 | 4822 051 20153 | 15k              | 5% | 0.1W  |
| 3249 | 4822 051 20821 | 820R             | 5% | 0.1W  |
| 3249 | 4822 051 20821 | 820R             | 5% | 0.1W  |

## CAPACITORS

|      |                |                     |     |      |
|------|----------------|---------------------|-----|------|
| 2100 | 4822 122 33195 | 100pF               | 10% | 50V  |
| 2104 | 4822 122 33195 | 100pF               | 10% | 50V  |
| 2107 | 4822 122 31746 | 1nF                 | 5%  | 50V  |
| 2115 | 4822 125 60101 | 10pF VARIABLE       |     |      |
| 2122 | 4822 122 31746 | 1nF                 | 5%  | 50V  |
| 2123 | 4822 122 31746 | 1nF                 | 5%  | 50V  |
| 2124 | 4822 121 51387 | 10nF                | 20% | 16V  |
| 2129 | 4822 121 43705 | 390pF               | 1%  | 160V |
| 2130 | 4822 125 50355 | 4.2 - 20pF VARIABLE |     |      |
| 2134 | 4822 122 33197 | 1nF                 | 10% | 50V  |
| 2135 | 4822 121 70245 | 560pF               | 1%  | 160V |
| 2141 | 4822 124 40244 | 2.2μF               | 20% | 63V  |
| 2142 | 4822 124 40242 | 1μF                 | 20% | 63V  |
| 2150 | 4822 124 40435 | 10μF                | 20% | 50V  |
| 2151 | 4822 124 40435 | 10μF                | 20% | 50V  |
| 2156 | 5322 126 10181 | 100nF               |     | 25V  |
| 2157 | 5322 126 10181 | 100nF               |     | 25V  |
| 2158 | 4822 122 31746 | 1nF                 | 5%  | 50V  |
| 2159 | 4822 122 31746 | 1nF                 | 5%  | 50V  |
| 2160 | 4822 124 40242 | 1μF                 | 20% | 63V  |
| 2161 | 4822 124 40242 | 1μF                 | 20% | 63V  |
| 2162 | 4822 124 40242 | 1μF                 | 20% | 63V  |
| 2172 | 4822 124 41631 | 1.5μF               | 20% | 50V  |
| 2173 | 4822 124 40433 | 47μF                | 20% | 25V  |
| 2177 | 5322 126 10181 | 100nF               |     | 25V  |

## CAPACITORS

|      |                |       |     |     |
|------|----------------|-------|-----|-----|
| 2178 | 4822 122 33197 | 1nF   | 10% | 50V |
| 2179 | 4822 122 33195 | 100pF | 10% | 50V |
| 2184 | 4822 124 41584 | 100μF | 20% | 10V |
| 2186 | 4822 122 31746 | 1nF   | 5%  | 50V |

## CHIP CAPACITORS

|      |                |       |     |     |
|------|----------------|-------|-----|-----|
| 2110 | 5322 122 32659 | 33pF  | 5%  | 50V |
| 2110 | 5322 122 32269 | 6.8pF | 5%  | 50V |
| 2110 | 5322 122 32269 | 6.8pF | 5%  | 50V |
| 2112 | 4822 122 33496 | 100nF | 10% | 63V |
| 2114 | 5322 122 32531 | 100pF | 5%  | 50V |
| 2120 | 5322 122 32268 | 470pF | 10% | 50V |
| 2121 | 5322 122 32481 | 15pF  | 5%  | 50V |
| 2133 | 4822 122 33177 | 10nF  | 20% | 50V |
| 2138 | 5322 122 32658 | 22pF  | 5%  | 50V |
| 2138 | 5322 122 32658 | 22pF  | 5%  | 50V |
| 2139 | 4822 122 32627 | 2.2nF | 10% | 50V |
| 2143 | 4822 122 33325 | 470nF | 20% | 50V |
| 2144 | 4822 122 33325 | 470nF | 20% | 50V |
| 2145 | 4822 122 33496 | 100nF | 10% | 63V |
| 2146 | 5322 122 33063 | 2.2pF | 10% | 50V |
| 2147 | 4822 122 33177 | 10nF  | 20% | 50V |
| 2152 | 4822 122 33496 | 100nF | 10% | 63V |
| 2154 | 4822 122 33175 | 2.2nF | 20% | 50V |
| 2155 | 4822 122 33175 | 2.2nF | 20% | 50V |
| 2158 | 4822 122 31775 | 680pF | 5%  | 50V |
| 2159 | 4822 122 31775 | 680pF | 5%  | 50V |
| 2168 | 4822 122 33481 | 1.8nF | 5%  | NP0 |
| 2169 | 5322 122 31863 | 330pF | 5%  | 50V |
| 2170 | 5322 126 10223 | 4.7nF | 10% | 63V |
| 2171 | 5322 126 10223 | 4.7nF | 10% | 63V |
| 2174 | 5322 116 80853 | 560pF | 5%  | 63V |
| 2175 | 5322 122 32531 | 100pF | 5%  | 50V |
| 2180 | 5322 122 31946 | 27pF  | 5%  | 50V |
| 2181 | 4822 122 32139 | 12pF  | 5%  | 63V |
| 2183 | 4822 122 33496 | 100nF | 10% | 63V |
| 2185 | 4822 122 33496 | 100nF | 10% | 63V |



## TUNER 92

## MISCELLANEOUS

|      |                |                      |
|------|----------------|----------------------|
| 1101 | 4822 210 10492 | FRONTEND ASSY /02/08 |
| 1110 | 4822 267 10283 | SOCKET COAX IEC 75R  |

## DIODES

|      |                |            |
|------|----------------|------------|
| 6101 | 4822 130 34174 | BZX79-C4V7 |
| 6102 | 4822 130 83075 | HN1V02H    |
| 6109 | 4822 130 30621 | 1N4148     |

## TRANSISTORS

|      |                |              |
|------|----------------|--------------|
| 7101 | 4822 130 60163 | 2SC1047      |
| 7104 | 5322 130 60068 | BC558C       |
| 7106 | 5322 130 60068 | BC558C       |
| 7107 | 5322 130 41982 | BC848 (CHIP) |
| 7108 | 4822 130 44196 | BC548C       |
| 7109 | 4822 130 44196 | BC548C       |
| 7111 | 5322 130 41982 | BC848 (CHIP) |
| 7112 | 4822 130 60163 | 2SC1047      |
| 7113 | 4822 130 44196 | BC548C       |
| 7114 | 4822 130 40937 | BC548B       |
| 7115 | 4822 130 41024 | BF245B       |
| 7116 | 4822 130 60163 | 2SC1047      |
| 7119 | 5322 130 41983 | BC858B(CHIP) |
| 7120 | 4822 130 44196 | BC548C       |
| 7150 | 5322 130 44779 | BC338-40     |
| 7151 | 4822 130 60163 | 2SC1047      |
| 7157 | 5322 130 44779 | BC338-40     |

## INTEGRATED CIRCUITS

|      |                |         |
|------|----------------|---------|
| 7103 | 4822 209 31001 | LA1851N |
| 7105 | 4822 209 30178 | LC7218  |

## COILS

|      |                |                      |
|------|----------------|----------------------|
| 5101 | 4822 157 53192 | 0.22μH               |
| 5103 | 4822 242 81249 | CER. FILTER 10.7MHz  |
| 5104 | 4822 157 63029 | AM IF COIL           |
| 5105 | 4822 157 63904 | Q-DETECION COIL      |
| 5106 | 4822 157 63802 | BIRDY FILTER         |
| 5108 | 4822 157 63912 | OSC.COIL AM 3-BAND   |
| 5110 | 4822 242 71878 | CERAM.RES. 450kHz    |
| 5111 | 4822 242 81248 | CER. FILTER 10.7MHz  |
| 5112 | 4822 242 72976 | CER.RESONATOR 7.2MHz |
| 5113 | 4822 242 81249 | CER. FILTER 10.7MHz  |
| 5114 | 4822 152 20699 | 560μH                |
| 5127 | 4822 158 60643 | FERROCEPTOR          |

## RESISTORS

|      |                |              |     |       |
|------|----------------|--------------|-----|-------|
| 3101 | 4822 052 10478 | 4R7          | 5%  | NFR   |
| 3108 | 4822 116 52224 | 470R         | 5%  | 0.5W  |
| 3113 | 4822 050 22201 | 220R         | 2%  | 0.25W |
| 3118 | 4822 050 22201 | 220R         | 2%  | 0.25W |
| 3120 | 4822 052 10229 | 22R          | 5%  | 0.33W |
| 3125 | 4822 100 11213 | 22k          | 30% | POT.  |
| 3131 | 4822 100 11319 | 4k7 trimpot. |     |       |
| 3134 | 4822 050 15602 | 5k6          | 1%  | 0.4W  |
| 3138 | 4822 116 83922 | 150R         | 5%  | 1W    |
| 3147 | 4822 050 15602 | 5k6          | 1%  | 0.4W  |
| 3150 | 4822 050 25601 | 560R         | 1%  | 0.6W  |
| 3151 | 4822 050 24702 | 4k7          | 1%  | 0.6W  |
| 3155 | 4822 050 22201 | 220R         | 2%  | 0.25W |
| 3158 | 4822 050 24702 | 4k7          | 1%  | 0.6W  |
| 3162 | 4822 050 22701 | 270R         | 1%  | 0.6W  |

## RESISTORS

|      |                |      |     |       |
|------|----------------|------|-----|-------|
| 3165 | 4822 050 21002 | 1k   | 1%  | 0.6W  |
| 3166 | 4822 050 21002 | 1k   | 1%  | 0.6W  |
| 3167 | 4822 050 21002 | 1k   | 1%  | 0.6W  |
| 3183 | 4822 050 21003 | 10k  | 2%  | 0.25W |
| 3186 | 4822 050 21003 | 10k  | 2%  | 0.25W |
| 3225 | 4822 050 21002 | 1k   | 1%  | 0.6W  |
| 3244 | 5322 116 44005 | 250R | 25% |       |

## CHIP RESISTORS

|      |                |                  |    |      |
|------|----------------|------------------|----|------|
| 3102 | 4822 051 20224 | 220k             | 5% | 0.1W |
| 3104 | 4822 051 20154 | 150k             | 5% | 0.1W |
| 3105 | 4822 051 20562 | 5k6              | 5% | 0.1W |
| 3106 | 4822 051 20829 | 82R              | 5% | 0.1W |
| 3107 | 4822 051 20104 | 100k             | 5% | 0.1W |
| 3114 | 4822 051 20332 | 3k3              | 5% | 0.1W |
| 3115 | 4822 051 20391 | 390R             | 5% | 0.1W |
| 3116 | 4822 051 20478 | 4R7              | 5% | 0.1W |
| 3117 | 4822 051 20331 | 330R             | 5% | 0.1W |
| 3121 | 4822 051 20272 | 2k7              | 5% | 0.1W |
| 3122 | 4822 051 20562 | 5k6              | 5% | 0.1W |
| 3123 | 4822 051 20223 | 22k              | 5% | 0.1W |
| 3124 | 4822 051 20103 | 10k              | 5% | 0.1W |
| 3126 | 4822 051 20123 | 12k              | 2% | 0.1W |
| 3127 | 4822 051 20562 | 5k6              | 5% | 0.1W |
| 3129 | 4822 051 20103 | 10k              | 5% | 0.1W |
| 3132 | 4822 051 20183 | 18k              | 5% | 0.1W |
| 3133 | 4822 051 20008 | CHIP JUMPER 0805 |    |      |
| 3135 | 4822 051 10008 | CHIP JUMPER 1206 |    |      |
| 3141 | 4822 051 20472 | 4k7              | 5% | 0.1W |
| 3142 | 4822 051 20472 | 4k7              | 5% | 0.1W |
| 3143 | 4822 051 20821 | 820R             | 5% | 0.1W |
| 3144 | 4822 051 20331 | 330R             | 5% | 0.1W |
| 3145 | 4822 051 20271 | 270R             | 5% | 0.1W |
| 3148 | 4822 051 20104 | 100k             | 5% | 0.1W |
| 3149 | 4822 051 20472 | 4k7              | 5% | 0.1W |
| 3152 | 4822 051 20103 | 10k              | 5% | 0.1W |
| 3153 | 4822 051 20274 | 270k             | 5% | 0.1W |
| 3156 | 4822 051 20153 | 15k              | 5% | 0.1W |
| 3157 | 4822 051 20472 | 4k7              | 5% | 0.1W |
| 3159 | 4822 051 20104 | 100k             | 5% | 0.1W |
| 3160 | 4822 051 20104 | 100k             | 5% | 0.1W |
| 3163 | 4822 051 20103 | 10k              | 5% | 0.1W |
| 3164 | 4822 051 20473 | 47k              | 5% | 0.1W |
| 3170 | 4822 051 20103 | 10k              | 5% | 0.1W |
| 3171 | 4822 051 20223 | 22k              | 5% | 0.1W |
| 3172 | 4822 051 20472 | 4k7              | 5% | 0.1W |
| 3173 | 4822 051 20223 | 22k              | 5% | 0.1W |
| 3184 | 4822 051 20332 | 3k3              | 5% | 0.1W |
| 3185 | 4822 051 20103 | 10k              | 5% | 0.1W |
| 3187 | 4822 051 20103 | 10k              | 5% | 0.1W |
| 3190 | 4822 051 20479 | 47R              | 5% | 0.1W |
| 3194 | 4822 051 20472 | 4k7              | 5% | 0.1W |
| 3196 | 4822 051 20008 | CHIP JUMPER 0805 |    |      |
| 3197 | 4822 051 20008 | CHIP JUMPER 0805 |    |      |
| 3198 | 4822 051 20103 | 10k              | 5% | 0.1W |
| 3200 | 4822 051 20008 | CHIP JUMPER 0805 |    |      |
| 3201 | 4822 051 20103 | 10k              | 5% | 0.1W |
| 3202 | 4822 051 20008 | CHIP JUMPER 0805 |    |      |
| 3223 | 4822 051 20474 | 470k             | 5% | 0.1W |

## CHIP RESISTORS

|      |                |                  |    |       |
|------|----------------|------------------|----|-------|
| 3230 | 4822 051 20223 | 22k              | 5% | 0,1W  |
| 3231 | 4822 051 20223 | 22k              | 5% | 0,1W  |
| 3233 | 4822 051 10102 | 1k               | 2% | 0,25W |
| 3236 | 4822 051 20008 | CHIP JUMPER 0805 |    |       |
| 3239 | 4822 051 20274 | 270k             | 5% | 0,1W  |
| 3240 | 4822 051 20472 | 4k7              | 5% | 0,1W  |

## CAPACITORS

|      |                |               |     |      |
|------|----------------|---------------|-----|------|
| 2103 | 4822 124 40433 | 47μF          | 20% | 25V  |
| 2104 | 4822 121 42408 | 220nF         | 5%  | 63V  |
| 2107 | 4822 122 31385 | 22pF          | 5%  | 50V  |
| 2114 | 5322 124 41431 | 22μF          | 20% | 25V  |
| 2115 | 4822 124 40239 | 0,47μF        | 20% | 63V  |
| 2116 | 5322 121 42386 | 100nF         | 5%  | 63V  |
| 2117 | 4822 121 41935 | 12nF          | 5%  | 250V |
| 2118 | 4822 121 41935 | 12nF          | 5%  | 250V |
| 2119 | 4822 124 40244 | 2,2μF         | 20% | 63V  |
| 2120 | 4822 124 40244 | 2,2μF         | 20% | 63V  |
| 2121 | 4822 124 40196 | 220μF         | 20% | 16V  |
| 2123 | 4822 124 40246 | 4,7μF         | 20% | 63V  |
| 2124 | 4822 124 40246 | 4,7μF         | 20% | 63V  |
| 2129 | 4822 124 40242 | 1μF           | 20% | 63V  |
| 2131 | 4822 124 40435 | 10μF          | 20% | 50V  |
| 2142 | 4822 125 60102 | 30pF VARIABLE |     |      |
| 2144 | 4822 121 42408 | 220nF         | 5%  | 63V  |
| 2145 | 4822 121 51263 | 510pF         | 1%  | 400V |
| 2146 | 4822 121 70082 | 430pF         | 1%  | 400V |
| 2152 | 4822 124 40242 | 1μF           | 20% | 63V  |
| 2156 | 4822 124 40433 | 47μF          | 20% | 25V  |
| 2160 | 4822 124 41631 | 1,5μF         | 20% | 50V  |
| 2162 | 4822 122 10166 | 22nF          | 30% | 16V  |
| 2165 | 4822 124 40433 | 47μF          | 20% | 25V  |
| 2193 | 4822 125 60102 | 30pF VARIABLE |     |      |
| 2194 | 4822 125 60101 | 10pF VARIABLE |     |      |
| 2210 | 4822 124 41643 | 100μF         | 20% | 16V  |

## CHIP CAPACITORS

|      |                |       |     |     |
|------|----------------|-------|-----|-----|
| 2101 | 5322 122 34099 | 470pF | 10% | 63V |
| 2102 | 5322 122 32268 | 470pF | 10% | 50V |
| 2105 | 5322 122 32965 | 18pF  | 5%  | 50V |
| 2108 | 5322 122 32654 | 22nF  | 10% | 63V |
| 2109 | 5322 122 32654 | 22nF  | 10% | 63V |
| 2110 | 5322 122 32654 | 22nF  | 10% | 63V |
| 2112 | 5322 122 32654 | 22nF  | 10% | 63V |
| 2113 | 5322 122 32661 | 56pF  | 5%  | 50V |
| 2125 | 4822 122 33177 | 10nF  | 20% | 50V |
| 2126 | 4822 122 31782 | 15nF  | 10% | 50V |
| 2147 | 5322 122 32654 | 22nF  | 10% | 63V |
| 2148 | 5322 122 32452 | 47pF  | 5%  | 50V |
| 2149 | 4822 122 33177 | 10nF  | 20% | 50V |
| 2150 | 5322 122 32654 | 22nF  | 10% | 63V |
| 2151 | 5322 122 34099 | 470pF | 10% | 63V |
| 2153 | 5322 122 34099 | 470pF | 10% | 63V |
| 2154 | 5322 122 32481 | 15pF  | 5%  | 50V |
| 2155 | 5322 122 32965 | 18pF  | 5%  | 50V |
| 2158 | 5322 126 10223 | 4,7nF | 10% | 63V |
| 2159 | 5322-126 10223 | 4,7nF | 10% | 63V |
| 2161 | 4822 122 32927 | 220nF | 10% | 63V |
| 2195 | 4822 126 10004 | 120pF | 5%  | 63V |
| 2196 | 5322 122 32448 | 10pF  | 5%  | 50V |
| 2215 | 5322 122 32268 | 470pF | 10% | 50V |
| 2216 | 5322 122 32268 | 470pF | 10% | 50V |

## CHIP CAPACITORS

|      |                |       |     |     |
|------|----------------|-------|-----|-----|
| 2219 | 4822 122 32927 | 220nF | 10% | 63V |
| 2221 | 5322 122 32268 | 470pF | 10% | 50V |
| 2224 | 4822 122 33575 | 220pF | 5%  | 50V |
| 2225 | 4822 122 33575 | 220pF | 5%  | 50V |

## CD BOARD

## MISCELLANEOUS

|      |                |               |
|------|----------------|---------------|
| 1020 | 4822 071 51601 | FUSE 160mA    |
| 1021 | 4822 071 51601 | FUSE 160mA    |
| 1250 | 4822 267 30933 | SOCKET CHINCH |

## DIODES

|      |                |            |
|------|----------------|------------|
| 6103 | 4822 130 30621 | 1N4148     |
| 6550 | 4822 130 31981 | BZX79-C3V9 |
| 6660 | 4822 130 34173 | BZX79-C5V6 |

## TRANSISTORS

|      |                |                 |
|------|----------------|-----------------|
| 7040 | 4822 130 60887 | BF840           |
| 7041 | 5322 130 41982 | BC848 (CHIP)    |
| 7042 | 5322 130 41983 | BC858B(CHIP)    |
| 7043 | 5322 130 41982 | BC848 (CHIP)    |
| 7044 | 5322 130 41982 | BC848 (CHIP)    |
| 7140 | 5322 130 42012 | BC858 (CHIP)    |
| 7141 | 4822 130 61207 | BC848 (CHIP)    |
| 7360 | 4822 130 42804 | BC817-25 (CHIP) |
| 7361 | 4822 130 42804 | BC817-25 (CHIP) |
| 7362 | 5322 130 42012 | BC858 (CHIP)    |

|      |                |              |
|------|----------------|--------------|
| 7550 | 5322 130 42012 | BC858 (CHIP) |
|------|----------------|--------------|

## INTEGRATED CIRCUITS

|      |                |                      |
|------|----------------|----------------------|
| 7000 | 4822 209 31064 | TDA1301T/N1          |
| 7060 | 4822 209 72587 | TCA372DP2            |
| 7080 | 4822 209 72587 | TCA372DP2            |
| 7101 | 4822 209 63925 | FCB61C65L-70T        |
| 7102 | 4822 209 30388 | SAA7341GP            |
| 7300 | 4822 209 83274 | NJM4560D             |
| 7301 | 4822 209 83274 | NJM4560D             |
| 7500 | 4822 209 80891 | MC7805CT             |
| 7660 | 4822 209 72587 | TCA372DP2            |
| 7700 | 4822 900 10318 | MC68HC05C8/SERVO-S17 |

## COILS

|      |                |                      |
|------|----------------|----------------------|
| 1002 | 4822 242 73557 | CERAMIC RES. 8.46MHz |
| 1570 | 4822 242 81151 | X-TAL 16.934MHz      |
| 1700 | 4822 242 72527 | CERAMIC RES. 4.0 MHz |
| 5250 | 4822 148 80281 | COIL 100µH           |

## RESISTORS

|      |                |      |       |       |
|------|----------------|------|-------|-------|
| 3000 | 4822 050 21003 | 10k  | 2%    | 0.25W |
| 3001 | 4822 050 21003 | 10k  | 2%    | 0.25W |
| 3002 | 4822 050 21003 | 10k  | 2%    | 0.25W |
| 3003 | 4822 050 21003 | 10k  | 2%    | 0.25W |
| 3004 | 4822 050 21003 | 10k  | 2%    | 0.25W |
| 3005 | 4822 050 21003 | 10k  | 2%    | 0.25W |
| 3007 | 4822 052 10338 | 3R3  | NFR25 |       |
| 3008 | 4822 052 10338 | 3R3  | NFR25 |       |
| 3014 | 4822 052 10478 | 4R7  | 5%    | NFR   |
| 3015 | 4822 050 21002 | 1k   | 1%    | 0.6W  |
| 3016 | 4822 050 21002 | 1k   | 1%    | 0.6W  |
| 3049 | 4822 050 24301 | 430R | 1%    | 0.6W  |
| 3056 | 4822 050 21204 | 120k | 1%    | 0.6W  |
| 3057 | 4822 050 25603 | 56k  | 1%    | 0.6W  |
| 3058 | 4822 050 21002 | 1k   | 1%    | 0.6W  |
| 3062 | 4822 116 52244 | 15k  | 5%    | 0.5W  |
| 3064 | 4822 050 21503 | 15k  | 1%    | 0.6W  |
| 3065 | 4822 052 10229 | 22R  | 5%    | 0.33W |
| 3066 | 4822 052 10108 | 1R   | 5%    | 0.33W |
| 3067 | 4822 052 10108 | 1R   | 5%    | 0.33W |

## RESISTORS

|      |                |      |       |       |
|------|----------------|------|-------|-------|
| 3072 | 4822 050 26802 | 6k8  | 1%    | 0.6W  |
| 3073 | 4822 052 10229 | 22R  | 5%    | 0.33W |
| 3074 | 4822 116 52244 | 15k  | 5%    | 0.5W  |
| 3075 | 4822 050 21003 | 10k  | 2%    | 0.25W |
| 3081 | 4822 050 24702 | 4k7  | 1%    | 0.6W  |
| 3083 | 4822 052 10108 | 1R   | 5%    | 0.33W |
| 3084 | 4822 052 10108 | 1R   | 5%    | 0.33W |
| 3085 | 4822 050 21003 | 10k  | 2%    | 0.25W |
| 3086 | 4822 052 10229 | 22R  | 5%    | 0.33W |
| 3087 | 4822 116 52244 | 15k  | 5%    | 0.5W  |
| 3100 | 4822 050 22202 | 2k2  | 1%    | 0.6W  |
| 3103 | 4822 052 10338 | 3R3  | NFR25 |       |
| 3105 | 4822 052 10338 | 3R3  | NFR25 |       |
| 3111 | 4822 052 10229 | 22R  | 5%    | 0.33W |
| 3112 | 4822 050 22205 | 2M2  | 1%    | 0.6W  |
| 3140 | 4822 116 52234 | 100k | 5%    | 0.5W  |
| 3142 | 4822 050 24703 | 47k  | 1%    | 0.6W  |
| 3143 | 4822 052 10229 | 22R  | 5%    | 0.33W |
| 3146 | 4822 050 21003 | 10k  | 2%    | 0.25W |
| 3305 | 4822 052 10229 | 22R  | 5%    | 0.33W |
| 3306 | 4822 052 10229 | 22R  | 5%    | 0.33W |
| 3312 | 4822 050 22203 | 22k  | 1%    | 0.6W  |
| 3314 | 4822 050 21002 | 1k   | 1%    | 0.6W  |
| 3315 | 4822 050 21002 | 1k   | 1%    | 0.6W  |
| 3501 | 4822 052 10108 | 1R   | 5%    | 0.33W |
| 3502 | 4822 052 10108 | 1R   | 5%    | 0.33W |
| 3611 | 4822 116 52303 | 8k2  | 5%    | 0.5W  |
| 3615 | 4822 052 10108 | 1R   | 5%    | 0.33W |
| 3616 | 4822 052 10108 | 1R   | 5%    | 0.33W |
| 3617 | 4822 052 10229 | 22R  | 5%    | 0.33W |
| 3701 | 4822 052 10338 | 3R3  | NFR25 |       |

## CHIP RESISTORS

|      |                |        |        |       |
|------|----------------|--------|--------|-------|
| 3006 | 4822 051 20103 | 10k    | 5%     | 0.1W  |
| 3009 | 4822 051 20105 | 1M     | 5%     | 0.1W  |
| 3010 | 4822 051 20103 | 10k    | 5%     | 0.1W  |
| 3011 | 4822 051 20103 | 10k    | 5%     | 0.1W  |
| 3012 | 4822 051 10102 | 1k     | 2%     | 0.25W |
| 3013 | 4822 051 10102 | 1k     | 2%     | 0.25W |
| 3017 | 4822 051 10102 | 1k     | 2%     | 0.25W |
| 3040 | 4822 051 10101 | 100R5% | 0.125W |       |
| 3041 | 4822 051 20393 | 39k    | 5%     | 0.1W  |
| 3042 | 4822 051 20334 | 330k   | 5%     | 0.1W  |
| 3043 | 4822 051 20303 | 30k    | 5%     | 0.1W  |
| 3044 | 4822 051 10102 | 1k     | 2%     | 0.25W |
| 3045 | 4822 051 20101 | 100R   | 5%     | 0.1W  |
| 3046 | 4822 051 10102 | 1k     | 2%     | 0.25W |
| 3047 | 4822 051 20434 | 430k   | 5%     | 0.1W  |
| 3048 | 4822 051 20101 | 100R   | 5%     | 0.1W  |
| 3050 | 4822 051 20434 | 430k   | 5%     | 0.1W  |
| 3051 | 4822 051 20182 | 1k8    | 5%     | 0.1W  |
| 3052 | 4822 051 20182 | 1k8    | 5%     | 0.1W  |
| 3053 | 4822 051 20392 | 3k9    | 5%     | 0.1W  |
| 3054 | 4822 051 20101 | 100R   | 5%     | 0.1W  |
| 3055 | 4822 051 20124 | 120k   | 5%     | 0.1W  |
| 3060 | 4822 117 10036 | 7k5    | 1%     | 0.1W  |
| 3061 | 4822 051 20682 | 6k8    | 5%     | 0.1W  |
| 3063 | 4822 051 20103 | 10k    | 5%     | 0.1W  |

## CHIP RESISTORS

|      |                |      |    |       |
|------|----------------|------|----|-------|
| 3070 | 4822 051 20153 | 15k  | 5% | 0.1W  |
| 3071 | 4822 051 20103 | 10k  | 5% | 0.1W  |
| 3080 | 4822 051 20682 | 6k8  | 5% | 0.1W  |
| 3082 | 4822 051 20153 | 15k  | 5% | 0.1W  |
| 3101 | 4822 051 20223 | 22k  | 5% | 0.1W  |
| 3102 | 4822 051 20223 | 22k  | 5% | 0.1W  |
| 3106 | 4822 051 10102 | 1k   | 2% | 0.25W |
| 3109 | 4822 051 20222 | 2k2  | 5% | 0.1W  |
| 3110 | 4822 051 20105 | 1M   | 5% | 0.1W  |
| 3117 | 4822 051 20182 | 1k8  | 5% | 0.1W  |
| 3118 | 4822 051 20182 | 1k8  | 5% | 0.1W  |
| 3119 | 4822 051 10561 | 560R | 2% | 0.25W |
| 3141 | 4822 051 20104 | 100k | 5% | 0.1W  |
| 3144 | 4822 051 20223 | 22k  | 5% | 0.1W  |
| 3147 | 4822 051 20392 | 3k9  | 5% | 0.1W  |
| 3148 | 4822 051 20473 | 47k  | 5% | 0.1W  |
| 3255 | 4822 051 10561 | 560R | 2% | 0.25W |
| 3256 | 4822 051 20621 | 620R | 5% | 0.1W  |
| 3300 | 4822 051 20104 | 100k | 5% | 0.1W  |
| 3301 | 4822 051 20273 | 27k  | 5% | 0.1W  |
| 3302 | 4822 051 20332 | 3k3  | 5% | 0.1W  |
| 3303 | 4822 051 20123 | 12k  | 2% | 0.1W  |
| 3304 | 4822 051 20123 | 12k  | 2% | 0.1W  |
| 3307 | 4822 051 20332 | 3k3  | 5% | 0.1W  |
| 3308 | 4822 051 20123 | 12k  | 2% | 0.1W  |
| 3309 | 4822 051 20104 | 100k | 5% | 0.1W  |
| 3310 | 4822 051 20273 | 27k  | 5% | 0.1W  |
| 3311 | 4822 051 20123 | 12k  | 2% | 0.1W  |
| 3313 | 4822 051 20223 | 22k  | 5% | 0.1W  |
| 3320 | 4822 116 83933 | 15k  | 1% | 0.1W  |
| 3321 | 4822 116 83933 | 15k  | 1% | 0.1W  |
| 3322 | 4822 116 83933 | 15k  | 1% | 0.1W  |
| 3323 | 4822 116 83933 | 15k  | 1% | 0.1W  |
| 3325 | 4822 116 83933 | 15k  | 1% | 0.1W  |
| 3326 | 4822 116 83933 | 15k  | 1% | 0.1W  |
| 3327 | 4822 116 83933 | 15k  | 1% | 0.1W  |
| 3328 | 4822 116 83933 | 15k  | 1% | 0.1W  |
| 3360 | 4822 051 10102 | 1k   | 2% | 0.25W |
| 3361 | 4822 051 10102 | 1k   | 2% | 0.25W |
| 3550 | 4822 051 20561 | 560R | 5% | 0.1W  |
| 3551 | 4822 051 10102 | 1k   | 2% | 0.25W |
| 3552 | 4822 051 20223 | 22k  | 5% | 0.1W  |
| 3553 | 4822 051 10102 | 1k   | 2% | 0.25W |
| 3610 | 4822 051 20123 | 12k  | 2% | 0.1W  |
| 3612 | 4822 051 20123 | 12k  | 2% | 0.1W  |
| 3613 | 4822 051 20123 | 12k  | 2% | 0.1W  |
| 3614 | 4822 051 20123 | 12k  | 2% | 0.1W  |
| 3662 | 4822 051 20103 | 10k  | 5% | 0.1W  |
| 3663 | 4822 051 20103 | 10k  | 5% | 0.1W  |
| 3664 | 4822 051 20103 | 10k  | 5% | 0.1W  |
| 3665 | 4822 051 20561 | 560R | 5% | 0.1W  |
| 3700 | 4822 051 20224 | 220k | 5% | 0.1W  |
| 3706 | 4822 051 20103 | 10k  | 5% | 0.1W  |
| 3707 | 4822 051 20103 | 10k  | 5% | 0.1W  |
| 3708 | 4822 051 20103 | 10k  | 5% | 0.1W  |
| 3710 | 4822 051 20103 | 10k  | 5% | 0.1W  |
| 3711 | 4822 051 20332 | 3k3  | 5% | 0.1W  |
| 3713 | 4822 051 20103 | 10k  | 5% | 0.1W  |
| 3714 | 4822 051 20103 | 10k  | 5% | 0.1W  |
| 3715 | 4822 051 20332 | 3k3  | 5% | 0.1W  |
| 3716 | 4822 051 20103 | 10k  | 5% | 0.1W  |
| 3717 | 4822 051 20103 | 10k  | 5% | 0.1W  |
| 3718 | 4822 051 20103 | 10k  | 5% | 0.1W  |
| 3719 | 4822 051 20103 | 10k  | 5% | 0.1W  |
| 3720 | 4822 051 20103 | 10k  | 5% | 0.1W  |

## CHIP RESISTORS

|      |                |                  |    |       |
|------|----------------|------------------|----|-------|
| 3721 | 4822 051 20103 | 10k              | 5% | 0.1W  |
| 3722 | 4822 051 10102 | 1k               | 2% | 0.25W |
| 3723 | 4822 051 10102 | 1k               | 2% | 0.25W |
| 3724 | 4822 051 10102 | 1k               | 2% | 0.25W |
| 4000 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |
| 4001 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |
| 4002 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |
| 4003 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |
| 4004 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |
| 4104 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |
| 4105 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |
| 4106 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |
| 4107 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |
| 4108 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |
| 4109 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |
| 4200 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |
| 4302 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |
| 4600 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |
| 4700 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |
| 4701 | 4822 051 10008 | CHIP JUMPER 1206 |    |       |

## CAPACITORS

|      |                |        |     |     |
|------|----------------|--------|-----|-----|
| 2010 | 5322 124 21643 | 22μF   | 20% | 40V |
| 2012 | 4822 124 40272 | 33μF   | 20% | 16V |
| 2015 | 5322 124 21643 | 22μF   | 20% | 40V |
| 2017 | 5322 124 21643 | 22μF   | 20% | 40V |
| 2042 | 5322 124 21643 | 22μF   | 20% | 40V |
| 2052 | 5322 124 21643 | 22μF   | 20% | 40V |
| 2062 | 4822 124 40272 | 33μF   | 20% | 16V |
| 2063 | 4822 124 40272 | 33μF   | 20% | 16V |
| 2081 | 5322 124 21643 | 22μF   | 20% | 40V |
| 2083 | 5322 124 21643 | 22μF   | 20% | 40V |
| 2103 | 4822 124 40849 | 330μF  | 20% | 16V |
| 2105 | 5322 121 42661 | 330nF  | 5%  | 63V |
| 2107 | 4822 124 41584 | 100μF  | 20% | 10V |
| 2109 | 4822 124 40242 | 1μF    | 20% | 63V |
| 2111 | 5322 121 42386 | 100nF  | 5%  | 63V |
| 2116 | 4822 124 40242 | 1μF    | 20% | 63V |
| 2119 | 4822 124 41584 | 100μF  | 20% | 10V |
| 2122 | 4822 124 40849 | 330μF  | 20% | 16V |
| 2301 | 4822 124 40272 | 33μF   | 20% | 16V |
| 2302 | 4822 124 40246 | 4.7μF  | 20% | 63V |
| 2304 | 4822 124 40272 | 33μF   | 20% | 16V |
| 2305 | 4822 124 40246 | 4.7μF  | 20% | 63V |
| 2311 | 4822 124 40246 | 4.7μF  | 20% | 63V |
| 2500 | 4822 124 80148 | 2200μF | 20% | 16V |
| 2502 | 4822 124 41853 | 1000μF | 20% | 16V |
| 2702 | 4822 124 40272 | 33μF   | 20% | 16V |

## CHIP CAPACITORS

|      |                |       |     |      |
|------|----------------|-------|-----|------|
| 2000 | 5322 122 31865 | 1.5nF | 10% | 63V  |
| 2001 | 5322 116 80853 | 560pF | 5%  | 63V  |
| 2003 | 4822 122 32575 | 220pF | 10% | 500V |
| 2004 | 4822 122 32575 | 220pF | 10% | 500V |
| 2005 | 4822 122 32575 | 220pF | 10% | 500V |
| 2006 | 4822 122 32575 | 220pF | 10% | 500V |
| 2007 | 4822 122 32575 | 220pF | 10% | 500V |
| 2008 | 4822 122 32575 | 220pF | 10% | 500V |
| 2009 | 4822 122 33496 | 100nF | 10% | 63V  |
| 2011 | 4822 122 33496 | 100nF | 10% | 63V  |
| 2016 | 4822 122 33496 | 100nF | 10% | 63V  |
| 2018 | 4822 122 33496 | 100nF | 10% | 63V  |
| 2019 | 4822 122 33809 | 22nF  | 20% | 63V  |
| 2040 | 5322 122 32654 | 22nF  | 10% | 63V  |
| 2041 | 4822 126 10326 | 180pF | 5%  |      |

## CHIP CAPACITORS

|      |                |       |     |     |
|------|----------------|-------|-----|-----|
| 2043 | 5322 122 31863 | 330pF | 5%  | 50V |
| 2044 | 4822 126 10326 | 180pF | 5%  |     |
| 2045 | 5322 122 32452 | 47pF  | 5%  | 50V |
| 2046 | 5322 122 32452 | 47pF  | 5%  | 50V |
| 2047 | 5322 122 32531 | 100pF | 5%  | 50V |
| 2048 | 5322 122 32965 | 18pF  | 5%  | 50V |
| 2049 | 4822 126 10326 | 180pF | 5%  |     |
| 2050 | 4822 126 10326 | 180pF | 5%  |     |
| 2051 | 5322 122 31863 | 330pF | 5%  | 50V |
| 2060 | 4822 122 33496 | 100nF | 10% | 63V |
| 2061 | 4822 122 33496 | 100nF | 10% | 63V |
| 2064 | 4822 122 33342 | 33nF  | 10% | 63V |
| 2065 | 4822 122 33496 | 100nF | 10% | 63V |
| 2066 | 4822 122 33175 | 2.2nF | 20% | 50V |
| 2070 | 4822 122 33176 | 2.7nF | 20% | 50V |
| 2071 | 4822 122 33496 | 100nF | 10% | 63V |
| 2072 | 4822 126 10326 | 180pF | 5%  |     |
| 2080 | 4822 122 33496 | 100nF | 10% | 63V |
| 2082 | 4822 122 33496 | 100nF | 10% | 63V |
| 2084 | 4822 126 10326 | 180pF | 5%  |     |
| 2085 | 4822 122 33496 | 100nF | 10% | 63V |
| 2086 | 5322 126 10465 | 3.9nF | 10% | 63V |
| 2101 | 5322 122 32452 | 47pF  | 5%  | 50V |
| 2102 | 4822 122 33175 | 2.2nF | 20% | 50V |
| 2104 | 4822 122 33496 | 100nF | 10% | 63V |
| 2106 | 4822 122 33496 | 100nF | 10% | 63V |
| 2108 | 4822 122 33809 | 22nF  | 20% |     |
| 2110 | 5322 122 32659 | 33pF  | 5%  | 50V |
| 2112 | 4822 122 33496 | 100nF | 10% | 63V |
| 2114 | 5322 122 32452 | 47pF  | 5%  | 50V |
| 2115 | 5322 122 32452 | 47pF  | 5%  | 50V |
| 2117 | 5322 126 10223 | 4.7nF | 10% | 63V |
| 2118 | 5322 126 10223 | 4.7nF | 10% | 63V |
| 2120 | 4822 122 33496 | 100nF | 10% | 63V |
| 2121 | 4822 122 33496 | 100nF | 10% | 63V |
| 2123 | 4822 122 33496 | 100nF | 10% | 63V |
| 2125 | 5322 126 10223 | 4.7nF | 10% | 63V |
| 2140 | 4822 122 33496 | 100nF | 10% | 63V |
| 2141 | 4822 122 32542 | 47nF  | 10% | 63V |
| 2253 | 4822 122 33105 | 56nF  | 10% | 63V |
| 2300 | 5322 116 80853 | 560pF | 5%  | 63V |
| 2303 | 4822 122 33216 | 270pF | 5%  | 50V |
| 2306 | 4822 122 33496 | 100nF | 10% | 63V |
| 2309 | 4822 122 33216 | 270pF | 5%  | 50V |
| 2310 | 5322 116 80853 | 560pF | 5%  | 63V |
| 2312 | 4822 122 33219 | 1.8nF | 10% | 50V |
| 2313 | 4822 122 33219 | 1.8nF | 10% | 50V |
| 2501 | 4822 122 33496 | 100nF | 10% | 63V |
| 2503 | 4822 122 33496 | 100nF | 10% | 63V |
| 2504 | 4822 122 33496 | 100nF | 10% | 63V |
| 2550 | 4822 122 33175 | 2.2nF | 20% | 50V |
| 2610 | 4822 122 33496 | 100nF | 10% | 63V |
| 2611 | 4822 122 33496 | 100nF | 10% | 63V |
| 2612 | 4822 122 33496 | 100nF | 10% | 63V |
| 2703 | 4822 122 33809 | 22nF  | 20% |     |
| 2704 | 4822 122 33175 | 2.2nF | 20% | 50V |

## ACCESSORIES

|                |                     |
|----------------|---------------------|
| 4822 321 10831 | AC CORD /20./21./22 |
| 4822 321 10918 | AC CORD /25         |
| 4822 321 10954 | AC CORD /30         |
| 4822 321 10883 | AC CORD /37         |
| 4822 218 10513 | IR REMOTE CONTROL   |
| 4822 445 10359 | SPEAKER /20./22./25 |
| 4822 445 10361 | SPEAKER/37          |
| 4822 445 10362 | SPEAKER/21          |
| 4822 321 10831 | SPEAKER/30          |